Dell™ OptiPlex™ SX260 Systems User's Guide

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your computer.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

Abbreviations and Acronyms

For a complete list of abbreviations and acronyms, see the "Glossary."

Model: DCT

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Regulatory Notices

Dell™ OptiPlex™ SX260 Systems User's Guide

Electromagnetic Interference (EMI) is any signal or emission, radiated in free space or conducted along power or signal leads, that endangers the functioning of a radio navigation or other safety service or seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include but are not limited to AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pager, and Personal Communication Services (PCS). These licensed services, along with unintentional radiators such as digital devices, including computer systems, contribute to the electromagnetic environment.

Electromagnetic Compatibility (EMC) is the ability of items of electronic equipment to function properly together in the electronic environment. While this computer system has been designed and determined to be compliant with regulatory agency limits for EMI, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio communications services, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that the computer and the receiver are on different branch circuits.

If necessary, consult a Dell Technical Support representative or an experienced radio/television technician for additional suggestions.

Dell™ computer systems are designed, tested, and classified for their intended electromagnetic environment. These electromagnetic environment classifications generally refer to the following harmonized definitions:

- Class A is typically for business or industrial environments.
- Class B is typically for residential environments.

Information Technology Equipment (ITE), including peripherals, expansion cards, printers, input/output (I/O) devices, monitors, and so on, that are integrated into or connected to the system should match the electromagnetic environment classification of the computer system.

A Notice About Shielded Signal Cables: Use only shielded cables for connecting peripherals to any Dell device to reduce the possibility of interference with radio communications services. Using shielded cables ensures that you maintain the appropriate EMC classification for the intended environment. For parallel printers, a cable is available from Dell. If you prefer, you can order a cable from Dell on the World Wide Web at accessories.us.dell.com/sna/category.asp?category_id=4117.

Most Dell computer systems are classified for Class B environments. However, the inclusion of certain options can change the rating of some configurations to Class A. To determine the electromagnetic classification for your system or device, see the following sections specific for each regulatory agency. Each section provides country-specific EMC/EMI or product safety information.

FCC Notices (U.S. Only)

Most Dell computer systems are classified by the Federal Communications Commission (FCC) as Class B digital devices. To determine which classification applies to your computer system, examine all FCC registration labels located on the bottom, side, or back panel of your computer, on card-mounting brackets, and on the cards themselves. If any one of the labels carries a Class A rating, your entire system is considered to be a Class A digital device. If *all* labels carry an FCC Class B rating as distinguished by either an FCC ID number or the FCC logo, (FC), your system is considered to be a Class B digital device.

Once you have determined your system's FCC classification, read the appropriate FCC notice. Note that FCC regulations provide that changes or modifications not expressly approved by Dell could void your authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Class A

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Class B

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

FCC Identification Information

The following information is provided on the device or devices covered in this document in compliance with FCC regulations:

- Model number: DCT
- Company name:

  Dell Computer Corporation
  One Dell Way
  Round Rock, Texas 78682 USA
  512-338-4400

IC Notice (Canada Only)

Most Dell computer systems (and other Dell digital apparatus) are classified by the Industry Canada (IC) Interference-Causing Equipment Standard #3 (ICES-003) as Class B digital devices. To determine which classification (Class A or B) applies to your computer system (or other Dell digital apparatus), examine all registration labels located on the bottom, side, or the back panel of your computer (or other digital apparatus). A statement in the form of "IC Class A ICES-003" or "IC Class B ICES-003" will be located on one of these labels. Note that Industry Canada regulations provide that changes or modifications not expressly approved by Dell could void your authority to operate this equipment.

This Class B (or Class A, if so indicated on the registration label) digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B (ou Classe A, si ainsi indiqué sur l'étiquette d'enregistration) respecte toutes les exigences du Reglement sur le Materiel Brouilleur du Canada.

CE Notice (European Union)

Marking by the symbol CE indicates compliance of this Dell computer to the EMC Directive and the Low Voltage Directive of the European Union. Such marking is indicative that this Dell system meets the following technical standards:

- EN 55022 — "Information Technology Equipment — Radio Disturbance Characteristics — Limits and Methods of Measurement."
- EN 55024 — "Information Technology Equipment - Immunity Characteristics - Limits and Methods of Measurement."
- EN 61000-3-2 — "Electromagnetic Compatibility (EMC) - Part 3: Limits - Section 2: Limits for Harmonic Current Emissions (Equipment Input Current Up to and Including 16 A Per Phase)."
- EN 61000-3-3 — "Electromagnetic Compatibility (EMC) - Part 3: Limits - Section 3: Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems for Equipment With Rated Current Up to and Including 16 A."
- EN 60950 — "Safety of Information Technology Equipment."
- EN 55022 — "Information Technology Equipment — Radio Disturbance Characteristics — Limits and Methods of Measurement."
- EN 50082-1 — "Electromagnetic Compatibility - Generic Immunity Standard - Part 1: Residential, Commercial and Light Industry."
- EN 50082-2 — "Electromagnetic Compatibility - Generic Immunity Standard - Part 2: Industrial Environment."
- EN 60950 — "Safety of Information Technology Equipment."

NOTE: EN 55022 emissions requirements provide for two classifications:

- Class A is for typical commercial areas.
- Class B is for typical domestic areas.

This Dell device is classified for use in a typical Class B domestic environment.

A "Declaration of Conformity" in accordance with the preceding directives and standards has been made and is on file at Dell Computer Corporation Products Europe BV, Limerick, Ireland.

ENERGY STAR® Compliance

Certain configurations of Dell computers comply with the requirements set forth by the Environmental Protection Agency (EPA) for energy-efficient computers. If the front panel of your computer bears the ENERGY STAR® Emblem, your original configuration complies with these requirements and all ENERGY STAR® power management features of the computer are enabled.

NOTE: Any Dell computer bearing the ENERGY STAR® Emblem is certified to comply with EPA ENERGY STAR® requirements as configured when shipped by Dell. Any changes you make to this configuration (such as installing additional expansion cards or drives) may increase the computer's power consumption beyond the limits set by the EPA's ENERGY STAR® Computers program.

ENERGY STAR® Emblem

The EPA's ENERGY STAR® Computers program is a joint effort between the EPA and computer manufacturers to reduce air pollution by promoting energy-efficient computer products. The EPA estimates that use of ENERGY STAR® computer products can save computer users up to two billion dollars annually in electricity costs. In turn, this reduction in electricity usage can reduce emissions of carbon dioxide, the gas primarily responsible for the greenhouse effect, and sulfur dioxide and nitrogen oxides, the primary causes of acid rain.

You can also help reduce electricity usage and its side effects by turning off your computer when it is not in use for extended periods of time, particularly at night and on weekends.

Simplified Chinese Class A Warning Notice (China Only)

On Class A systems, the following warning will appear near the regulatory label:

Warning: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

声明
此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。
在这种情况下，可能需要用户对其干扰采取切实可行的措施。

EN 55022 Compliance (Czech Republic Only)

This device belongs to Class B devices as described in EN 55022, unless it is specifically stated that it is a Class A device on the specification label. The following applies to devices in Class A of EN 55022 (radius of protection up to 30 meters). The user of the device is obliged to take all steps necessary to remove sources of interference to telecommunication or other devices.

Pokud není na typovém štitku počítače uvedeno, že spadá do třídy A podle EN 55022, spadá automaticky do třídy B podle EN 55022. Pro zařízení zařazená do třídy A (ochranné pásmo 30m) podle EN 55022 platí následující. Dojde-li k rušení telekomunikačních nebo jinych zařízení, je uživatel povinen provést taková opatření, aby rušení odstranil.

VCCI Notice (Japan Only)

Most Dell computer systems are classified by the Voluntary Control Council for Interference (VCCI) as Class B information technology equipment (ITE). However, the inclusion of certain options can change the rating of some configurations to Class A. ITE, including peripherals, expansion cards, printers, input/output (I/O) devices, monitors, and so on, integrated into or connected to the system should match the electromagnetic environment classification (Class A or B) of the computer system.

To determine which classification applies to your computer system, examine the regulatory labels/markings (see "VCCI Class A ITE Regulatory Mark" and "VCCI Class B ITE Regulatory Mark") located on the bottom, side, or back panel of your computer. Once you have determined your system's VCCI classification, read the appropriate VCCI notice.

Class A ITE

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の
基準に基づくクラス A 情報技術装置です。この装置を家庭環境で
使用すると電波妨害を引き起こすことがあります。この場合には
使用者が適切な対策を講ずるよう要求されることがあります。

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

VCCI Class A ITE Regulatory Mark

If the regulatory label includes the following marking, your computer is a Class A product:

VCCI

Class B ITE

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の
基準に基づくクラス B 情報技術装置です。この装置は家庭環境で
使用することを目的としていますが、ラジオやテレビジョン受信機
に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをしてください。

This is a Class B product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

VCCI Class B ITE Regulatory Mark

If the regulatory label includes the following marking, your computer is a Class B product:

MIC Notice (Republic of Korea Only)

To determine which classification (Class A or B) applies to your computer (or other Dell digital device), examine the Republic of Korean Ministry of Information and Communications (MIC) registration labels located on your computer (or other Dell digital device). The MIC label may be located separately from the other regulatory marking applied to your product. Line two of the label identifies the emissions class for the product—"(A)" for Class A products or "(B)" for Class B products.

NOTE: MIC emissions requirements provide for two classifications:

- Class A devices are for business purposes.
- Class B devices are for nonbusiness purposes.

Class A Device

기 종 별	사 용 자 안 내 문
A급 기기 (업무용 정보통신기기)	이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Please note that this device has been approved for business purposes with regard to electromagnetic interference. If you find that this device is not suitable for your use, you may exchange it for a nonbusiness-purpose device.

MIC Class A Regulatory Label

If the regulatory label includes the following marking, your computer is a Class A product:

1. 기기의 명칭(모델명):
2. 인증번호:(A)
3. 인증받은 자의 상호:
4. 제조년월일:
5. 제조자/제조국가:

Class B Device

기종별	사용자 안내문
B급 기기 (가정용 정보통신기기)	이 기기는 가정용으로 전자파적합등록을 한 기기로서 주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

Please note that this device has been approved for nonbusiness purposes and may be used in any environment, including residential areas.

MIC Class B Regulatory Label

If the regulatory label includes the following marking, your computer is a Class B product.

1. 기기의 명칭(모델명):
2. 인증번호:(B)
3. 인증받은 자의 상호:
4. 제조년월일:
5. 제조자/제조국가:

Polish Center for Testing and Certification Notice

The equipment should draw power from a socket with an attached protection circuit (a 3-prong socket). All equipment that works together (computer, monitor, printer, and so on) should have the same power supply source.

The phasing conductor of the room's electrical installation should have a reserve short-circuit protection device in the form of a fuse with a nominal value no larger than 16 amperes (A).

To completely switch off the equipment, the power supply cable must be removed from the power supply socket, which should be located near the equipment and easily accessible.

A protection mark "B" confirms that the equipment is in compliance with the protection usage requirements of standards PN-93/T-42107 and PN-EN 55022: 1996.

Wymagania Polskiego Centrum Badań i Certyfikacji

Urządzenie powinno być zasilane z gniazda z przyłączonym obwodem ochronnym (gniazdo z kołkiem). Współpracujące ze sobą urządzenia (komputer, monitor, drukarka) powinny być zasilane z tego samego źródła.

Instalacja elektryczna pomieszczenia powinna zawierać w przewodzie fazowym rezerwową ochronę przed zwarciami, w postaci bezpiecznika o wartości znamionowej nie większej niż 16A (amperów).

W celu całkowitego wyłączenia urządzenia z sieci zasilania, należy wyjąć wtyczkę kabla zasilającego z gniazdka, które powinno znajdować się w pobliżu urządzenia i być łatwo dostępne.
Znak bezpieczeństwa "B" potwierdza zgodność urządzenia z wymaganiami bezpieczeństwa użytkowania zawartymi w *PN–EN 60950:2000 i PN–EN 55022:2000.*

Jeżeli na tabliczce znamionowej umieszczono informację, że urządzenie jest klasy A, to oznacza to, że urządzenie w środowisku mieszkalnym może powodować zakłócenia radioelektryczne. W takich przypadkach można żądać od jego użytkownika zastosowania odpowiednich úrodków zaradczych.

Pozostałe instrukcje bezpieczeństwa

- Nie należy używać wtyczek adapterowych lub usuwać kołka obwodu ochronnego z wtyczki. Jeżeli konieczne jest użycie przedłużacza to należy użyć przedłużacza 3–żyłowego z prawidłowo połączonym przewodem ochronnym.
- System komputerowy należy zabezpieczyć przed nagłymi, chwilowymi wzrostami lub spadkami napięcia, używając eliminatora przepięć, urządzenia dopasowującego lub bezzakłóceniowego źródła zasilania.
- Należy upewnić się, aby nic nie leżało na kablach systemu komputerowego, oraz aby kable nie były umieszczone w miejscu, gdzie można byłoby na nie nadeptywać lub potykać się o nie.
- Nie należy rozlewać napojów ani innych płynów na system komputerowy.
- Nie należy wpychać żadnych przedmiotów do otworów systemu komputerowego, gdyż może to spowodować pożar lub porażenie prądem, poprzez zwarcie elementów wewnętrznych.
- System komputerowy powinien znajdować się z dala od grzejników i źródeł ciepła. Ponadto, nie należy blokować otworów wentylacyjnych. Należy unikać kładzenia luźnych papierów pod komputer oraz umieszczania komputera w ciasnym miejscu bez możliwości cyrkulacji powietrza wokół niego.

BSMI Notice (Taiwan Only)

If you find a or mark on the regulatory

label on the bottom, side, or back panel of your computer, the following section is applicable:

BSMI 通告 (僅限於台灣)

大多數的 Dell 電腦系統被 BSMI (經濟部標準檢驗局) 劃分為乙類數位裝置。但是，使用某些選件會使有些組態的等級變成甲類。若要確定您的電腦系統適用等級，請檢查所有位於電腦底部或背面板、擴充卡安裝托架，以及擴充卡上的 BSMI 註冊標籤。如果其中有一甲類標籤，即表示您的系統為甲類數位裝置。如果只有 BSMI 的檢磁號碼標籤，則表示您的系統為乙類數位裝置。

一旦確定了系統的 BSMI 等級，請閱讀相關的 BSMI 通告。請注意，BSMI 通告規定凡是未經 Dell Computer Corporation 明確批准的擅自變更或修改，將導致您失去此設備的使用權。

此裝置符合 BSMI (經濟部標準檢驗局) 的規定，使用時須符合以下兩項條件：

- 此裝置不會產生有害干擾。
- 此裝置必須能接受所接收到的干擾，包括可能導致無法正常作業的干擾。

甲類

此設備經測試證明符合 BSMI (經濟部標準檢驗局) 之甲類數位裝置的限制規定。這些限制的目的是為了在商業環境中使用此設備時，能提供合理的保護以防止有害的干擾。此設備會產生、使用並散發射頻能量；如果未遵照製造廠商的指導手冊來安裝和使用，可能會干擾無線電通訊。請勿在住宅區使用此設備。

警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求采取某些適當的對策。

乙類

此設備經測試證明符合 BSMI (經濟部標準檢驗局) 之乙類數位裝置的限制規定。這些限制的目的是為了在住宅區安裝時，能防止有害的干擾，提供合理的保護。此設備會產生、使用並散發射頻能量；如果未遵照製造廠商的指導手冊來安裝和使用，可能會干擾無線電通訊。但是，這並不保證在個別的安裝中不會產生干擾。您可以透過關閉和開啟此設備來判斷它是否會對廣播和電視收訊造成干擾；如果確實如此，我們建議您嘗試以下列一種或多種方法來排除干擾：

- 重新調整天線的接收方向或重新放置接收天線。
- 增加設備與接收器的距離。
- 將設備連接至不同的插座，使設備與接收器連接在不同的電路上。
- 請向經銷商或有經驗的無線電/電視技術人員查詢，以獲得幫助。

NOM Information (Mexico Only)

The following information is provided on the device(s) described in this document in compliance with the requirements of the official Mexican standards (NOM):

Exporter:	Dell Computer Corporation One Dell Way Round Rock, TX 78682
Importer:	Dell Computer de México, S.A. de C.V. Paseo de la Reforma 2620 - 11° Piso Col. Lomas Altas 11950 México, D.F.
Ship to:	Dell Computer de México, S.A. de C.V. al Cuidado de Kuehne & Nagel de México S. de R.I. Avenida Soles No. 55 Col. Peñon de los Baños 15520 México, D.F.
Model number:	DCT
Supply voltage:	12 VDC
Input current rating:	12 A

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Warranty and Return Policy

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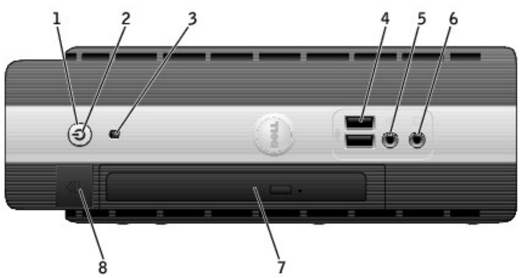
Dell Computer Corporation ("Dell") manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry-standard practices. For information about the Dell warranty for your computer, see the *Setup and Quick Reference Guide*.

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About Your Computer

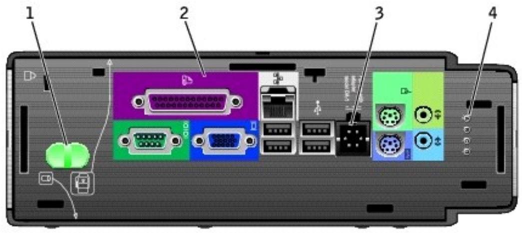
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Front View



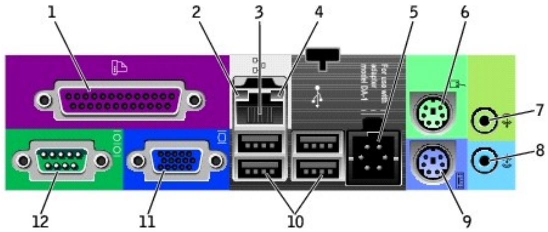
1	power button	Press this button to turn on the computer. **NOTICE:** To avoid losing data, do not use the power button to turn off the computer. Instead, perform a Microsoft® Windows® shutdown.
2	power light	The power light illuminates and blinks or remains solid to indicate different states: • Steady green — The computer is in a normal operating state • Blinking green — The computer is in a power-saving state (S1 or S3) • No light — The computer is in the off state (S4 [Hibernate], S5 [Soft-off], or mechanical OFF) • Blinking or solid amber — See "Power Problems." To exit from a power-saving state, press the power button or click or move the mouse. See "Diagnostic Lights" for a description of light codes that can help you troubleshoot problems with your computer.
3	hard-drive access light	The hard-drive access light is on when the computer reads data from or writes data to the hard drive. The light might also be on when devices such as your CD player are operating.
4	USB connectors (2)	Connect USB devices such as a mouse, keyboard, printer, joystick, and computer speakers into either of the USB connectors.
5	microphone connector	Attach a microphone to this connector.
6	headphone connector	Attach headphones to this connector.
7	module bay	Install a CD/DVD drive, second hard drive, or floppy drive in the module bay.
8	module release button	Press this button to remove a device in the module bay.

Back View



1	computer cover/hard- drive release button	Press this button toward the cover release icon to remove the cover, or press this button toward the hard-drive icon to release the hard drive.
2	back-panel connectors	The connectors for your computer.
3	power connector	The connector for the power adapter.
4	diagnostic lights	See "Diagnostic Lights" for a description of light codes that can help you troubleshoot problems with your computer.

Back-Panel Connectors



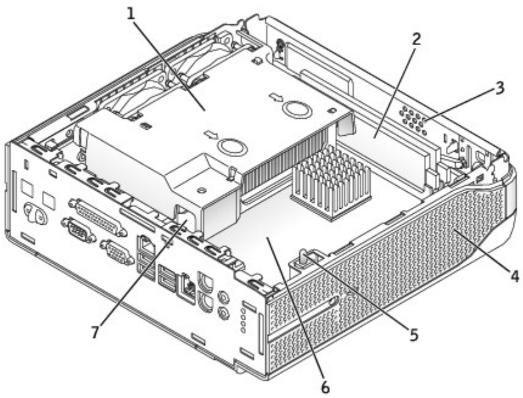
1	parallel connector	Connect a parallel device, such as a printer, to the parallel connector. If you have a USB printer, plug it into a USB connector.
2	link integrity light	• Green — A good connection exists between a 10-Mbps network and the computer. • Orange — A good connection exists between a 100-Mbps network and the computer. • Yellow — A good connection exists between a 1000-Mbps (1-Gbps) network and the computer. • Off — The computer is not detecting a physical connection to the network.
3	network adapter	Attach the UTP cable to an RJ45 jack wall plate or to an RJ45 port on a UTP concentrator or hub and press the other end of the UTP cable into the network adapter connector until the cable snaps securely into place. Dell recommends the use of Category 5 wiring and connectors for our customers' networks.
4	network activity light	The yellow light flashes when the computer is transmitting or receiving network data. A high volume of network traffic may make this light appear to be in a steady "on" state.
5	power connector	The connector for the power adapter.
6	mouse connector	Plug a standard mouse into the green mouse connector. Turn off the computer and any attached devices before you connect a mouse to the computer. If you have a USB mouse, plug it into a USB connector. If your computer is running Windows 2000 or Windows XP, Dell installed the necessary mouse drivers on your hard drive.
7	line-out connector	Use the green line-out connector to attach headphones and most speakers with integrated amplifiers.
8	line-in connector	Use the blue line-in connector to attach a record/playback device such as a cassette player, CD player, or VCR.
9	keyboard connector	If you have a standard keyboard, plug it into the purple keyboard connector. If you have a USB keyboard, plug it into a USB connector.
10	USB connectors (4)	Connect USB devices such as a mouse, keyboard, printer, joystick, and computer speakers into any of the USB connectors.
11	video connector	Plug the cable from your VGA-compatible monitor into the blue connector.
12	serial connector	Connect a serial device, such as a handheld device, to the serial connector.

Inside Your Computer

CAUTION: Before you remove the computer cover, follow the steps in "CAUTION: Safety Instructions."

CAUTION: To avoid electrical shock, always unplug your computer from the power adapter before removing the cover.

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.



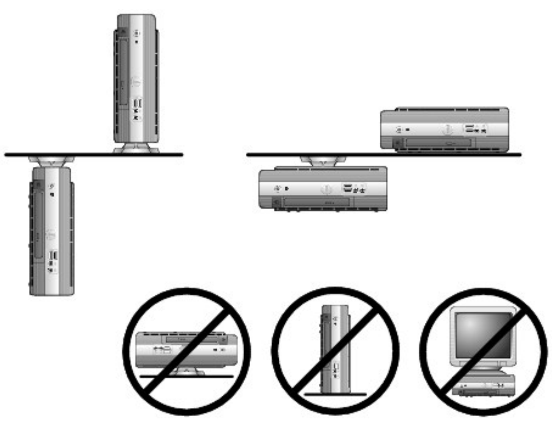
1	microprocessor heat sink fan shroud	**5**	chassis intrusion switch
2	memory modules	**6**	system board
3	speaker (optional)	**7**	battery
4	cooling vents		

Orientations

The computer can be used in either a vertical or horizontal position on a desktop or mounted under a surface such as a desk or table. By using a wall-mount bracket, the computer may be attached to a wall.

NOTICE: When setting up your computer, secure all cables toward the back of your work area to prevent the cables from being pulled, tangled, or stepped on.

Standard Orientations



NOTICE: Do not place your monitor on the computer. Use a monitor stand.

NOTICE: In a high-vibration environment or when installing the computer overhead, use the optional wall-mount bracket instead of the chassis stand. To order this bracket, contact Dell.

NOTICE: To ensure proper ventilation, do not place your computer vertically on a desktop without using the chassis stand (see "Chassis Stand").

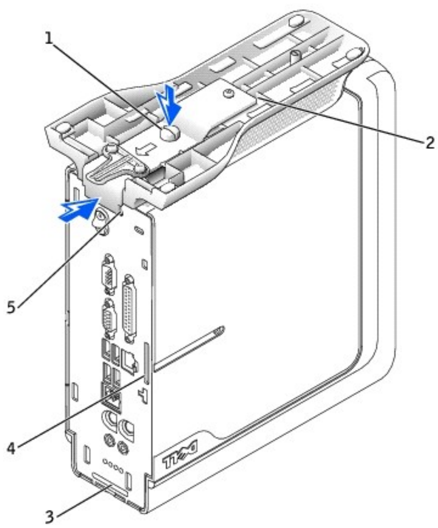
NOTICE: To ensure proper ventilation, do not block the cooling vents.

As an option, you may mount the computer to a vertical or horizontal surface by using a wall-mount bracket. If you have the integrated flat-panel option, the stand is integrated as part of the total assembly.

Chassis Stand

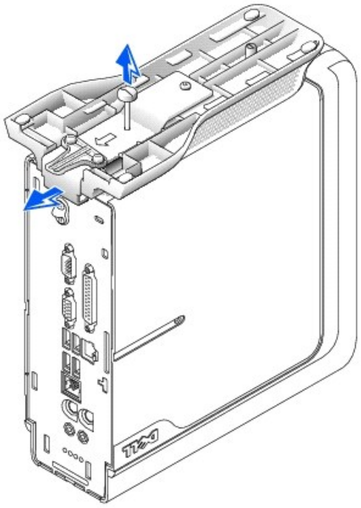
You may attach the chassis stand to orient your computer vertically. You can also attach the stand to the mounting plate (see "Mounting Plate") to hang the computer under a table- or desktop or to securely attach the computer to a horizontal surface.

1. Raise the captive screw and slide the chassis stand slat into one of three mounting slots on the back of the computer.
2. When the stand is in place, tighten the screw.



1	captive screw	
2	chassis stand	
3	mounting slot (for vertical position, upright on a desktop)	
4	mounting slot (for horizontal position hanging under a desktop) **NOTE:** the stand must not be used in the horizontal position on a desktop. Place the computer directly on a desktop.	
5	mounting slot (for vertical position, hanging under a surface)	

To remove the chassis stand, loosen and lift the screw. Hold the screw up while sliding the stand out of the slot.

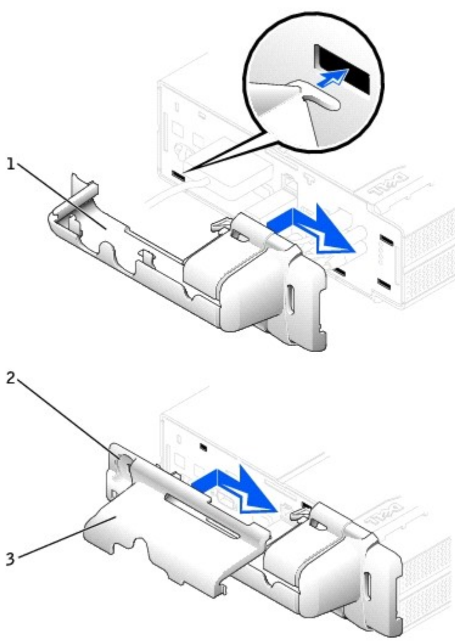


Cable Cover

NOTICE: If you are installing the computer under a desktop or tabletop, do not attach the cable cover until the computer is firmly attached to the mounting plate (see "Mounting Plate").

Attaching the Cable Cover

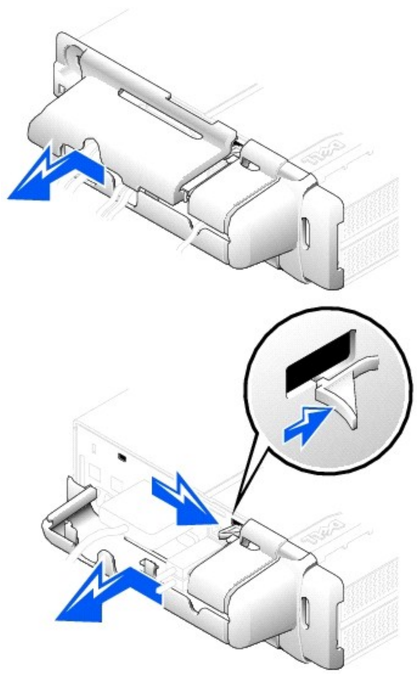
NOTE: If you use the stand on your computer, attach the stand before attaching the cable cover.



1	bottom piece of the cable cover
2	security cable slot
3	top piece of the cable cover

1. Attach all the cables to the back panel.
2. To attach the two-piece cable cover, hold the bottom piece of the cable cover and align the four tabs with the four slots on the computer's back panel.
3. Insert the tabs into the slots and slide the piece toward the diagnostic lights (see the illustration) until it is securely positioned.
4. Grasp the top piece of the cable cover and align the two tabs with the two slots in the computer's back panel.
5. Insert the tabs into the slots and slide the piece toward the diagnostic lights (see the illustration).
6. Install a security device in the security cable slot (optional).

Removing the Cable Cover

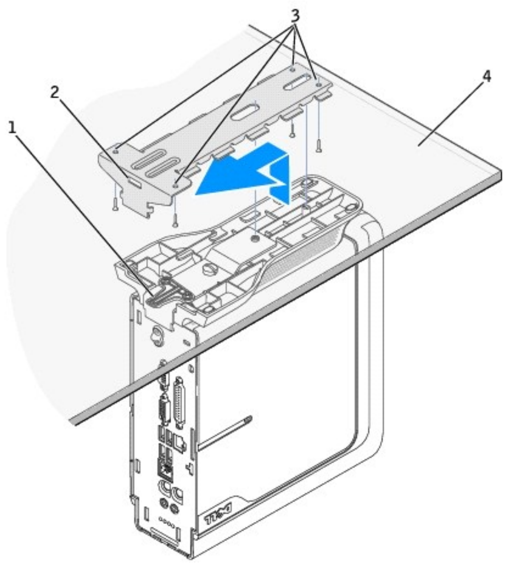


1. If a security device is installed in the security cable slot, remove the device.
2. Grasp the top piece of the cable cover and slide it to the left until it stops, and then lift it up and away.
3. To remove the bottom piece of the cable cover, while pressing the lever, slide the piece to the left until it stops, and then lift it up and away.

Mounting Plate

NOTICE: When installing the computer in the hanging orientation, avoid locations where it will be bumped by a user's legs or chair.

Attaching the Computer to the Mounting Plate

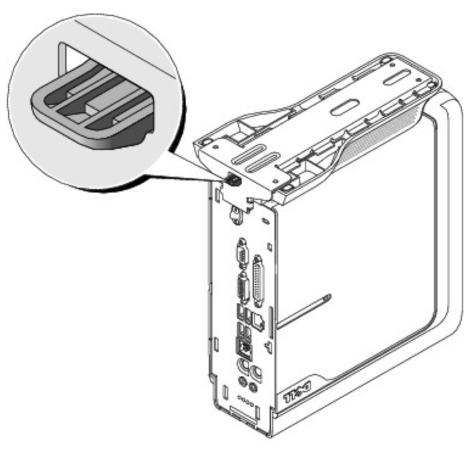


NOTE: Before attaching the mounting plate to a surface, first orient yourself with how the stand will attach to the mounting plate.

1	release lever tab
2	mounting plate slot
3	screw holes (4)
4	solid surface with a 1-inch (2.5 cm) minimum thickness

CAUTION: Attach the mounting plate to a solid surface capable of supporting 40 lbs (18.1 kg) hanging weight.

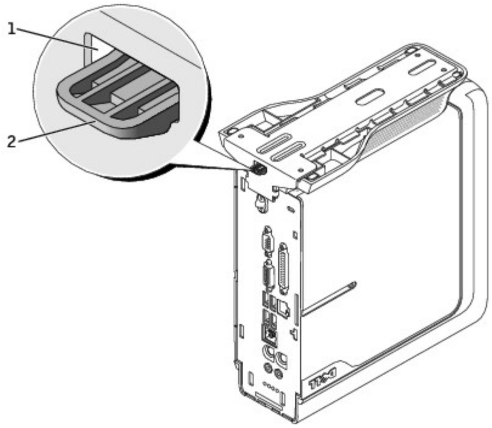
1. Using the four #6 wood screws (0.625 inch; 15.88 mm) provided, attach the mounting plate to a solid surface with a minimum thickness of 1 inch (2.5 cm).
2. Orient the computer and stand under the mounting plate approximately 1 inch (2.5 cm) from the edge of the mounting plate.
3. Lift the computer and stand, insert the stand into the mounting bracket, and slide the stand until the release lever tab is inserted and fully engaged



through the slot in the mounting plate.

4. Attach the cable cover (if used).

Removing the Computer from the Mounting Plate



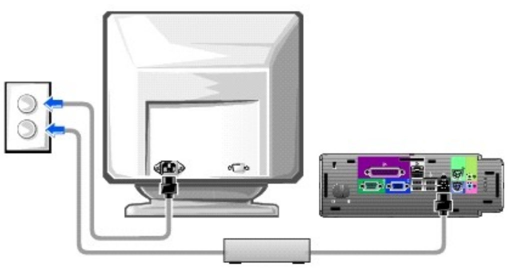
1	mounting plate slot
2	release lever tab

⚠ **CAUTION: To avoid personal injury, remove the mounting plate if you are permanently removing the computer.**

1. Firmly hold the computer and press on the release lever tab until the tab is freed from the slot on the mounting plate.
2. While still firmly holding the computer, slide the computer and stand approximately 1 inch (2.5 cm), until it stops.
3. Lower the computer and stand away from the mounting plate.

Connecting the Power Adapter

1. Connect the power adapter to the connector on the back of the computer. In order for the connection to be secure, verify that the latch engages completely (a click will be heard or felt).
2. Connect a power cable to the power adapter.



NOTICE: The following section applies to Japan only.

⚠ **CAUTION: If you decide to connect the green ground wire to an electrical outlet, *do not permit* contact between the green ground wire and power leads because electrical shock, fire, or damage to your computer can occur (see the following figure).**

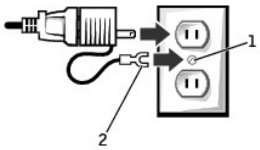


If you decide *not* to connect the green ground wire to an electrical outlet, go to step 4.

3. Connect the metal ground connector to the grounding source on the outlet (see the following figure):

   a. Loosen the grounding source.

   b. Slide the metal ground connector behind the grounding source, and then tighten the grounding source.



1	grounding source
2	metal ground connector

4. Connect the power cable to the outlet.

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Back to Contents Page

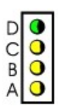
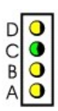
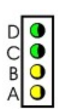
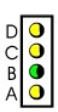
Advanced Troubleshooting

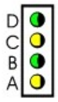
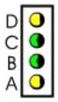
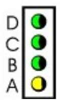
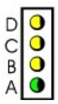
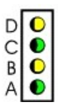
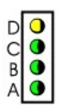
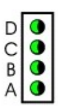
Dell™ OptiPlex™ SX260 Systems User's Guide

Diagnostic Lights

To help troubleshoot a problem, your computer has four lights on the back panel labeled "A","B","C," and "D." These lights can be either yellow or green. When the computer starts normally, the patterns or codes on the lights will change as the boot process completes. If the POST portion of system boot completes successfully, all four lights will display solid green. If the computer malfunctions during the POST process, the pattern displayed on the LEDs may help identify where in the process the computer halted.

CAUTION: Before you begin any of the procedures in this section, follow the steps in "CAUTION: Safety Instructions."

Light pattern		Problem Description	Suggested Resolution
	off off off off	Normal off condition or possible pre-BIOS failure	Verify that the computer is plugged into a working outlet and that you have pressed the power button.
	green yellow yellow yellow	Possible BIOS failure; the computer is in the recovery mode	Run the BIOS Recovery Utility, wait for recovery completion, and restart the computer to retest.
	yellow green yellow yellow	Possible processor failure	Reseat the processor, and restart the computer to retest.
	green green yellow yellow	Possible memory failure	Reseat all memory modules and restart the computer to retest.
	yellow yellow green yellow	Possible expansion card failure	Remove each expansion card individually, and restart the computer to retest. Reinstall the expansion card(s) one at a time, and restart the computer to retest. Move each expansion card one at a time to another PCI slot, and restart the computer to retest.

	green yellow green yellow	Possible video card failure or bad on-board video	If you have a video card, reseat it and restart the computer to retest. If you have video integrated, you must replace the system board.
	yellow green green yellow	Possible floppy or hard drive failure	Reseat all power and data cables, and restart the computer to retest.
	green green green yellow	Possible USB failure	Reseat all USB devices and cables, and restart the computer to retest.
	yellow yellow yellow green	No memory detected	Reseat all memory modules and restart the computer. If the problem still exists, to eliminate the possibility of a faulty memory connector, install one memory module (if the computer supports a single module), and restart the computer. Then move the module to another connector and restart the computer.
	yellow green yellow green	Memory is detected, but a memory configuration or compatibility error exists	Be sure that the memory modules are compatible with your computer. If necessary, replace the memory modules.
	yellow green green green	Other failure	Check the computer message that appears on your monitor screen.
	green green green green	Normal operating condition after POST	None.

Beep Codes

Your computer might emit a series of beeps that identify a problem. One possible series (code 1-3-1) consists of one beep, a burst of three beeps, and then one beep. This series tell you that the computer encountered a memory problem.

Try to resolve the problem — Write the beep code down on the Diagnostics Checklist, and perform the action recommended in the following table.
Run the Dell Diagnostics to identify a more serious cause.
Contact Dell for technical assistance.

Code	Cause	Action
1-1-2	Microprocessor register failure	Contact Dell for technical assistance.
1-1-3	NVRAM	Run the System Board Devices tests in the Dell Diagnostics, if possible.
1-1-4	ROM BIOS checksum failure	Run the System Board Devices tests in the Dell Diagnostics, if possible.
1-2-1	Programmable interval timer	Run the System Board Devices tests in the Dell Diagnostics, if possible.
1-2-2	DMA initialization failure	Run the System Board Devices tests in the Dell Diagnostics, if possible.
1-2-3	DMA page register read/write failure	Run the System Board Devices tests in the Dell Diagnostics, if possible.

1-3	Video Memory Test failure	Run the VESA/VGA Interface tests in the Dell Diagnostics.
1-3-1 through 2-4-4	DIMMs not being properly identified or used	See "Memory Problems."
3-1-1	Slave DMA register failure	Run the System Board Devices tests in the Dell Diagnostics, if possible.
3-1-2	Master DMA register failure	Run the System Board Devices tests in the Dell Diagnostics, if possible.
3-1-3	Master interrupt mask register failure	Contact Dell for technical assistance.
3-1-4	Slave interrupt mask register failure	Contact Dell for technical assistance.
3-2-2	Interrupt vector loading failure	Contact Dell for technical assistance.
3-2-4	Keyboard Controller Test failure	Run the Keyboard tests in the Dell Diagnostics. Otherwise, contact Dell for technical assistance.
3-3-1	NVRAM power loss	Run the System Board Devices tests in the Dell Diagnostics, if possible.
3-3-2	NVRAM configuration	Run the System Board Devices tests in the Dell Diagnostics, if possible.
3-3-4	Video Memory Test failure	Run the VESA/VGA Interface tests in the Dell Diagnostics.
3-4-1	Screen initialization failure	Run the VESA/VGA Interface tests in the Dell Diagnostics.
3-4-2	Screen retrace failure	Run the VESA/VGA Interface tests in the Dell Diagnostics.
3-4-3	Search for video ROM failure	Run the VESA/VGA Interface tests in the Dell Diagnostics.
4-2-1	No time tick	Contact Dell for technical assistance.
4-2-2	Shutdown failure	Contact Dell for technical assistance.
4-2-3	Gate A20 failure	Contact Dell for technical assistance.
4-2-4	Unexpected interrupt in protected mode	Contact Dell for technical assistance.
4-3-1	Memory failure above address 0FFFFh	Run the System Memory tests in the Dell Diagnostics.
4-3-3	Timer-chip counter 2 failure	Contact Dell for technical assistance.
4-3-4	Time-of-day clock stopped	Contact Dell for technical assistance.
4-4-1	Serial or parallel port test failure	Run the Serial Ports and the Parallel Ports tests in the Dell Diagnostics.
4-4-2	Failure to decompress code to shadowed memory	Run the System Board Devices tests in the Dell Diagnostics, if possible.
4-4-3	Math-coprocessor test failure	Run the System Board Devices tests in the Dell Diagnostics, if possible.
4-4-4	Cache test failure	Run the System Board Devices tests in the Dell Diagnostics, if possible.

Dell Diagnostics

When to Use the Dell Diagnostics

If you experience a problem with your computer, run the Dell Diagnostics before you contact Dell for technical assistance. Running the Dell Diagnostics may help you resolve the problem without contacting Dell. If you do contact Dell, the test results can provide important information for Dell's service and support personnel.

The Dell Diagnostics allow you to:

- Perform express, extended, or custom tests on one or all devices
- Select tests based on a symptom of the problem you are having
- Choose how many times a test is run
- Display test results
- Suspend testing if an error is detected
- Access online help information that describes the tests and devices
- Receive status messages that tell you whether tests completed successfully
- Receive error messages if problems are detected

Starting the Dell Diagnostics

It is recommended that you print these procedures before you begin.

NOTICE: Only use the Dell Diagnostics to test your Dell™ computer. Using this program with other computers can result in error messages.

Enter system setup, review your computer's configuration information, and ensure that the device you want to test displays in system setup and is active.

Start the Dell Diagnostics from either your hard drive or from the *Drivers and Utilities* CD (also known as the *ResourceCD*).

Starting the Dell Diagnostics From Your Hard Drive

1. Shut down and restart the computer.
2. When the DELL® logo appears, press <F12> immediately.

NOTE: If you receive a message stating that no Diagnostics utility partition has been found, follow the instructions to run the Dell Diagnostics from your *Drivers and Utilities* CD.

If you wait too long and the Microsoft® Windows® logo appears, continue to wait until you see the Windows desktop. Then shut down your computer through the **Start** menu and try again.

3. When the boot device list appears, highlight **Boot to Utility Partition** and press <Enter>.
4. When the Dell Diagnostics Main Menu appears, select the test you want to run.

Starting the Dell Diagnostics From the Drivers and Utilities CD

1. Insert the *Drivers and Utilities* CD into the CD drive.
2. Shut down and restart the computer.

When the DELL logo appears, press <F12> immediately.

If you wait too long and the Windows logo appears, continue to wait until you see the Windows desktop. Then shut down your computer through the **Start** menu and try again.

NOTE: This feature changes the boot sequence for one time only. On the next start-up, the computer boots according to the devices specified in system setup.

3. When the boot device list appears, highlight **IDE CD-ROM Device** and press <Enter>.
4. Select the **IDE CD-ROM Device** option from the CD boot menu.
5. Select the **Boot from CD-ROM** option from the menu that appears.
6. Type 1 to start the ResourceCD menu.
7. Type 2 to start the Dell Diagnostics.
8. Select **Run the 32 Bit Dell Diagnostics** from the numbered list. If multiple versions are listed, select the version appropriate for your platform.
9. When the Dell Diagnostics Main Menu appears, select the test you want to run.

Dell Diagnostics Main Menu

1. After the Dell Diagnostics loads and the **Main Menu** screen appears, click the button for the option you want.

HINT: The Service Tag number for your compute r is located in the title bar of each test screen.

Option	Function
Express Test	Performs a quick test of devices. This test typically takes 10 to 20 minutes and requires no interaction on your part. Run Express Test first to increase the possibility of tracing the problem quickly.
Extended Test	Performs a thorough check of devices. This test typically takes an hour or more and requires you to answer questions periodically.
Custom Test	Tests a specific device. You can customize the tests to be run.
Symptom Tree	Lists the most common symptoms encountered and allows you to select a test based on the symptom of the problem you are having.

2. If a problem is encountered during a test, a message appears displaying the error code and a description of the problem. Write down the error code and problem description and follow the instructions on the screen.

If you cannot resolve the error condition, contact Dell.

3. If you run a test from the **Custom Test** or **Symptom Tree** option, click the applicable tab described in the following table for more information.

Tab	Function
Results	Displays the results of the test and any error conditions encountered.
Errors	Displays error conditions encountered, error codes, and problem description.
Help	Describes the test and may indicate requirements for running the test.
Configuration	Displays your hardware configuration for the selected device. The Dell Diagnostics obtains your configuration information for all devices from system setup, memory, and various internal tests and displays it in the device list in the left pane of the screen. The device list may not display the names of all the components installed on your computer or all devices attached to your computer.
Parameters	Allows you to customize the test by changing the test settings.

4. When the tests are completed, if you are running the Dell Diagnostics from the *Drivers and Utilities* CD*,* remove the CD.
5. Close the test screen to return to the **Main Menu** screen. To exit the Dell Diagnostics and restart the computer, close the **Main Menu** screen.

Reinstalling Drivers

NOTE: To access device drivers and user documentation, you must use the *Drivers and Utilities* CD while your computer is running Windows.

1. Insert the *Drivers and Utilities* CD into the CD drive.

   If this is your first time to use the *Drivers and Utilities* CD, the **ResourceCD Installation** window opens to inform you that the CD will begin installation. Click **OK**, and respond to the installation program prompts to complete the installation.

2. Click **Next** at the **Welcome Dell System Owner** screen.
3. Choose the appropriate selections for **System Model**, **Operating System**, and **Topic**.

   The *Drivers and Utilities* CD scans your computer's hardware and operating system and then displays a list of device drivers for your system configuration.

4. Click the appropriate driver and follow the instructions to download the driver for your computer.

   To view a list of all available drivers for your computer, click **Drivers** in the **Topic** pull-down menu.

To access the *Dell OptiPlex ResourceCD Guide*, click **User's Guides** in the **Topic** pull-down menu, and then click **Dell OptiPlex ResourceCD**.

Reinstalling Microsoft Windows XP

Before You Reinstall

NOTICE: Before performing the installation, back up all data files on your primary hard drive. For conventional hard drive configurations, the primary hard drive is the first drive detected by the computer.

To reinstall Windows XP, you need the following items:

- Dell *Operating System* CD
- Dell *ResourceCD*

NOTE: The Dell *ResourceCD* contains drivers that were factory-installed during assembly of the computer. Use the ResourceCD to load any required drivers, including those drivers required if your computer has a redundant array of independent disks (RAID) controller.

- Product Key (Product ID Number) ____________________

NOTE: The Product Key is the bar code number on the sticker that is located on the external side cover of your computer. You may be prompted for the Product Key when using the *Operating System* CD under certain conditions.

Reinstalling Windows XP

To reinstall Windows XP, perform all the steps in the following sections in the order in which they are listed.

The reinstallation process can take 1 to 2 hours to complete. After you reinstall the operating system, you must also reinstall the device drivers, virus protection program, and other software.

NOTICE: The *Operating System* CD provides options for reinstalling Windows XP. The options can overwrite files and possibly affect programs installed on your hard drive. Therefore, do not reinstall Windows XP unless instructed to do so by a Dell technical support representative.

NOTICE: To prevent conflicts with Windows XP, disable any virus protection software installed on your computer before you reinstall Windows XP. See the documentation that came with the software for instructions.

Booting From the Operating System CD

1. Save and close any open files and exit any open programs.
2. Insert the *Operating System* CD. If any program starts automatically, exit the program before proceeding.
3. Shut down the computer through the **Start** menu and restart the computer.
4. Press <F12> immediately after the DELL™ logo appears.

   If the operating system logo appears, wait until you see the Windows desktop, and then shut down the computer and try again.

5. Press the arrow keys to select **CD-ROM**, and then press <Enter>.
6. When the `Press any key to boot from CD` message appears, press any key.

Windows XP Setup

1. When the **Windows XP Setup** screen appears, press <Enter> to select **To set up Windows now**.
2. Read the information on the **Microsoft Windows Licensing Agreement** screen, and press <F8> to accept the license agreement.
3. If your computer already has Windows XP installed and you want to recover your current Windows XP data, type `r` to select the repair option, and then remove the CD from the drive.
4. If you want to install a new copy of Windows XP, press <Esc> to select that option.
5. Press <Enter> to select the highlighted partition (recommended), and then follow the instructions on the screen.

   The **Windows XP Setup** screen appears, and the operating system begins to copy files and install the devices. The computer automatically restarts multiple times.

NOTE: The time required to complete the setup depends on the size of the hard drive and the speed of your computer.

NOTICE: Do not press any key when the following message appears: `Press any key to boot from the CD`.

6. When the **Regional and Language Options** screen appears, select the settings for your location, and then click **Next**.
7. Enter your name and organization (optional) in the **Personalize Your Software** screen and click **Next**.
8. *If you are reinstalling Windows XP Home Edition*, at the **What's your computer's name** window, enter a name for your computer (or accept the name provided) and click **Next**.

   If you are reinstalling Windows XP Professional, at the **Computer Name and Administrator Password** window, enter a name for your computer (or accept the one provided) and a password, and then click **Next**.

9. If the **Modem Dialing Information** screen appears, enter the requested information and click **Next**.
10. Enter the date, time, and time zone in the **Date and Time Settings** window and click **Next**.
11. If the **Networking Settings** screen appears, click **Typical** and click **Next**.
12. If you are reinstalling Windows XP Professional and you are prompted to provide further information regarding your network configuration, enter your selections. If you are unsure of your settings, accept the default selections.

    Windows XP installs the operating system components and configures the computer. The computer automatically restarts.

NOTICE: Do not press any key when the following message appears: `Press any key to boot from the CD`.

13. When the Welcome to Microsoft screen appears, click **Next**.
14. When the `How will this computer connect to the Internet?` message appears, click **Skip**.
15. When the **Ready to register with Microsoft?** screen appears, select **No, not at this time** and click **Next**.
16. When the **Who will use this computer?** screen appears, you can enter up to five users. Click **Next**.

17. Click **Finish** to complete the setup, and remove the CD from the drive.
18. Reinstall the appropriate drivers using the *ResourceCD*.
19. Reinstall your virus protection software.

Reinstalling Microsoft Windows 2000

NOTICE: The *Operating System* CD provides options for reinstalling Windows XP. The options can overwrite files and possibly affect programs installed on your hard drive. Therefore, do not reinstall Windows XP unless instructed to do so by a Dell technical support representative.

The reinstallation process can take 1 to 2 hours to complete. After you reinstall the operating system, you must also reinstall the device drivers, virus protection program, and other software.

1. Save and close any open files and exit any open programs.
2. Insert the *Operating System* CD. If any program starts automatically, exit the program before proceeding.
3. Shut down the computer through the **Start** menu and restart the computer.
4. Press <F12> immediately after the DELL™ logo appears.

   If the operating system logo appears, wait until you see the Windows desktop, and then shut down the computer and try again.

5. Press the arrow keys to select **CD-ROM**, and then press <Enter>.
6. When the `Press any key to boot from CD` message appears, press any key.
7. When the **Windows 2000 Setup** window appears, ensure that **To setup Win2000 now, press ENTER** is highlighted. Then press <Enter>.
8. When the **Windows 2000 Professional Setup** window appears, press the arrow keys to select the Windows 2000 partition option that you want. Then press the key for the partition option you chose.
9. When the **Windows 2000 Professional Setup** window reappears, press the arrow keys to select the type of file system that you want Windows 2000 to use, and then press <Enter>.
10. Press <Enter> again to restart your computer.
11. Click **Next** when the **Welcome to the Windows 2000 Setup Wizard** window appears.
12. When the **Regional Settings** window appears, select your region, and then click **Next**.
13. Enter your name and organization in the **Personalize Your Software** window, and then click **Next**.
14. Enter the Windows product key, which is printed on the Microsoft label on your computer. Then click **Next**.
15. When the **Computer Name and Administrator Password** window appears, enter a name for your computer and a password, if desired. Then click **Next**.
16. Enter the date and time in the **Date and Time Settings** window, and then click **Next**.

    Windows 2000 installs components and configures the computer.

17. When the **Completing the Windows 2000 Setup Wizard** window appears, remove the CD from the drive, and then click **Finish**.

    The computer automatically restarts.

18. Reinstall the appropriate drivers using the *Drivers and Utilities* CD.
19. Reinstall your virus protection software.

Resolving Software and Hardware Incompatibilities

Windows XP

Microsoft Windows XP IRQ conflicts occur if a device either is not detected during the operating system setup or is detected but incorrectly configured.

To check for conflicts on a computer running Windows XP:

1. Click the **Start** button, and then click **Control Panel**.
2. Click **Performance and Maintenance**, and then click **System**.
3. Click the **Hardware** tab, and then click **Device Manager**.
4. In the **Device Manager** list, check for conflicts with the other devices.

Conflicts are indicated by a yellow exclamation point (!) beside the conflicting device or a red X if the device has been disabled.

5. Double-click any conflicting device listed to bring up the **Properties** window to determine what needs to be reconfigured or removed from the Device Manager.

Resolve these conflicts before checking specific devices.

6. Double-click the malfunctioning device type in the **Device Manager** list.
7. Double-click the icon for the specific device in the expanded list.

The **Properties** window appears.

8. Resolve any IRQ conflicts, as described in step 5.

If an IRQ conflict exists, the **Device** status area in the **Properties** window reports the cards or devices that share the device's IRQ.

To use the Windows XP Hardware Troubleshooter:

1. Click the **Start** button, and then click **Help and Support**.
2. Type `hardware troubleshooter` in the **Search** field, and then click the arrow to start the search.
3. Click **Hardware Troubleshooter** in the **Search Results** list.
4. In the **Hardware Troubleshooter** list, click **I need to resolve a hardware conflict on my computer**, and then click **Next**.

Windows 2000

To check for conflicts on a computer running Windows 2000:

1. Click the **Start** button, point to **Settings**, and click **Control Panel**.
2. In the **Control Panel** window, double-click **System**.
3. Click the **Hardware** tab.
4. Click **Device Manager**.
5. Click **View**, and then click **Resources by connection**.
6. Double-click **Interrupt request (IRQ)** to view the IRQ assignments.

Conflicts are indicated by a yellow exclamation point (!) beside the conflicting device or a red X if the device has been disabled.

7. Double-click any conflicting device listed to bring up the **Properties** window to determine what needs to be reconfigured or removed from the Device Manager. Resolve these conflicts before checking specific devices.
8. Double-click the malfunctioning device type in the **Device Manager** list.
9. Double-click the icon for the specific device in the expanded list.

The **Properties** window appears.

10. If an IRQ conflict exists, the **Device status** area in the **Properties** window reports the cards or devices that share the device's IRQ. Resolve the IRQ conflicts.

To use the Windows 2000 Hardware Troubleshooter:

1. Click the **Start** button, and then click **Help**.
2. Click **Troubleshooting and Maintenance** on the **Contents** tab, click **Windows 2000 troubleshooters**, and then click **Hardware**.
3. In the **Hardware Troubleshooter** list, click **I need to resolve a hardware conflict on my computer**, and then click **Next**.

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Advanced Features

Dell™ OptiPlex™ SX260 Systems User's Guide

LegacySelect Technology Control

LegacySelect technology control offers legacy-full, legacy-reduced, or legacy-free solutions based on common platforms, hard-drive images, and help desk procedures. Control is provided to the administrator through system setup, Dell OpenManage™ IT Assistant, or Dell™ custom factory integration.

LegacySelect allows administrators to electronically activate or deactivate connectors and media devices that include serial and USB connectors, a parallel connector, a floppy drive, and a PS/2 mouse. Connectors and media devices that are deactivated make resources available. You must restart the computer to effect the changes.

Manageability

Alert Standard Format

ASF is a DMTF management standard that specifies "pre-operating system" or "operating system-absent" alerting techniques. It is designed to generate an alert on potential security and fault conditions when the operating system is in a sleep state or the system is powered down. ASF is designed to supersede previous operating system-absent alerting technologies.

Your computer supports the following ASF alerts and remote capabilities:

Alert	Description
Chassis Intrusion/Chassis Intrusion Cleared	System chassis has been opened/System chassis intrusion alert has been cleared
Corrupt BIOS	The system BIOS is corrupted
Failure to Boot to BIOS	System BIOS did not complete loading upon initiation
System Password Failure	System password invalid (after 3 failed attempts)
Entity Presence	Periodic Heartbeats transmitted to verify system presence
CPU Failure	Microprocessor is present but not functioning

For more information about Dell's ASF implementation, see the *ASF User's Guide* and the *ASF Administrator's Guide*, available on the Dell Support website at **support.dell.com**.

Dell OpenManage IT Assistant

IT Assistant configures, manages, and monitors computers and other devices on a corporate network. IT Assistant manages assets, configurations, events (alerts), and security for computers equipped with industry-standard management software. It supports instrumentation that conforms to SNMP, DMI, and CIM industry standards.

Dell OpenManage Client instrumentation, which is based on DMI and CIM, is available for your computer. For information on IT Assistant, see the *Dell OpenManage IT Assistant User's Guide* available on the Dell Support website at **support.dell.com**.

Dell OpenManage Client Instrumentation

Dell OpenManage Client Instrumentation is software that enables remote management programs such as IT Assistant to do the following:

- Access information about your computer, such as how many processors it has and what operating system it is running
- Monitor the status of your computer, such as listening for thermal alerts from temperature probes or hard-drive failure alerts from storage devices
- Change the state of your computer, such as updating its BIOS or shutting it down remotely

A managed system is one that has Dell OpenManage Client Instrumentation set up on a network that uses IT Assistant. For information about Dell OpenManage Client Instrumentation, see the *Dell OpenManage Client Instrumentation User's Guide* available on the Dell Support website at **support.dell.com**.

Security

Chassis Intrusion Detection

NOTE: When the setup password is enabled, you must know the setup password before you can reset the **Chassis Intrusion** setting.

This feature detects that the chassis was opened and alerts the user. To change the **Chassis Intrusion** setting:

1. Enter system setup.
2. Press the down-arrow keys to move to the **System Security** option.
3. Press <Enter> to access the **System Security** option's pop-up menu.
4. Press the down-arrow key to move to the **Chassis Intrusion** setting.
5. Press the spacebar to select an option setting.
6. Exit system setup.

Option Settings

- **Enabled** — If the computer cover is removed, the setting changes to **Detected**, and the following alert message displays during the boot routine at the next computer start-up:

  ```
  Alert! Cover was previously removed.
  ```

  To reset the **Detected** setting, enter system setup. In the **Chassis Intrusion** option, press the left- or right-arrow key to select **Reset**, and then choose **Enabled**, **Enabled-Silent**, or **Disabled**.

- **Enabled-Silent** (default) — If the computer cover is opened, the setting changes to **Detected**. No alert message appears during the boot sequence at the next computer start-up.
- **Disabled** — No intrusion monitoring occurs and no messages appear.

Security Cable Slot

Attach a commercially available antitheft device to the security cable slot on the back of the cable cover (see "Cable Cover").

NOTE: Before you purchase an antitheft device, make sure that it works with the security cable slot on your computer.

Antitheft devices usually include a segment of metal-stranded cable with an attached locking device and key. Dell recommends that you use a Kensington lock. The documentation that comes with the device contains instructions for installing it.

Password Protection

NOTICE: Although passwords provide security for the data on your computer, they are not foolproof. If your data requires more security, it is your responsibility to obtain and use additional forms of protection, such as data encryption programs.

System Password

NOTICE: If you leave your computer running and unattended without having a system password assigned, or if you leave your computer unlocked so that someone can disable the password by changing a jumper setting, anyone can access the data stored on your hard drive.

Option Settings

You cannot change or enter a new system password if either of the following two options is displayed:

- **Enabled** — A system password is assigned.
- **Disabled —** The system password is disabled by a jumper setting on the system board.

You can only assign a system password when the following option is displayed:

- **Not Enabled** — No system password is assigned and the password jumper on the system board is in the enabled position (the default).

Assigning a System Password

To escape from the field without assigning a system password, press <Tab> or the <Shift><Tab> key combination to move to another field, or press <Esc> at any time before you complete step 5.

1. Enter system setup and verify that **Password Status** is set to **Unlocked**.
2. Highlight **System Password**, and then press the left- or right-arrow key.

   The option heading changes to **Enter Password**, followed by an empty 32-character field in square brackets.

3. Type your new system password.

   You can use up to 32 characters. To erase a character when entering your password, press <Backspace> or the left-arrow key. The password is not case sensitive.

   Certain key combinations are not valid. If you enter one of these combinations, the speaker emits a beep.

   As you press each character key (or the spacebar for a blank space), a placeholder appears in the field.

4. Press <Enter>.

   If the new system password is less than 32 characters, the whole field fills with placeholders. Then the option heading changes to **Verify Password**, followed by another empty 32-character field in square brackets.

5. To confirm your password, type it a second time and press <Enter>.

   The password setting changes to **Enabled**.

6. Exit system setup.

Password protection takes effect when you restart the computer.

Typing Your System Password

When you start or restart your computer, one of the following prompts appears on the screen.

If **Password Status** is set to **Unlocked**:

```
Type in the password and
- press <ENTER> to leave password security enabled.
- press <CTRL><ENTER> to disable password security.
Enter password:
```

If **Password Status** is set to **Locked**:

```
Type the password and press <Enter>.
```

If you have assigned a setup password, the computer accepts your setup password as an alternate system password.

If you type a wrong or incomplete system password, the following message appears on the screen:

```
** Incorrect password. **
```

If you again type an incorrect or incomplete system password, the same message appears on the screen. The third and subsequent times you type an incorrect or incomplete system password, the computer displays the following message:

```
** Incorrect password. **
Number of unsuccessful password attempts: 3
System halted! Must power down.
```

Even after your computer is turned off and on, the previous message is displayed each time you type an incorrect or incomplete system password.

NOTE: You can use **Password Status** in conjunction with **System Password** and **Setup Password** to further protect your computer from unauthorized changes.

Deleting or Changing an Existing System Password

1. Enter system setup and verify that **Password Status** is set to **Unlocked**.
2. Restart your computer.
3. When prompted, type the system password.
4. Press <Ctrl><Enter> to disable the existing system password.
5. Confirm that **Not Enabled** is displayed for the **System Password** option.

If **Not Enabled** is displayed, the system password is deleted. If **Not Enabled** is not displayed, press <Alt><b> to restart the computer, and then repeat step 3 through step 5.

To assign a new password, follow the procedure in "Assigning a System Password."

6. Exit system setup.

Setup Password

Option Settings

- **Enabled** — does not allow assignment of setup passwords; users must enter a setup password to make changes to system setup
- **Not Enabled** — allows assignment of setup passwords; password feature is enabled but no password is assigned

Assigning a Setup Password

The setup password can be the same as the system password.

NOTE: If the two passwords are different, the setup password can be used as an alternate system password. However, the system password cannot be used in place of the setup password.

1. Enter system setup and verify that **Setup Password** is set to **Not Enabled.**
2. Highlight **Setup Password** and press the left- or right-arrow key.

   The computer prompts you to type and verify the password. If a character is not permitted, the computer emits a beep.

3. Type and then verify the password.

   After you verify the password, the **Setup Password** setting changes to **Enabled**. The next time you enter system setup, the computer prompts you for the setup password.

4. Exit system setup.

   A change to **Setup Password** becomes effective immediately (no need to restart the computer).

Operating Your Computer With a Setup Password Enabled

When you enter system setup, the **Setup Password** option is highlighted, prompting you to type the password.

If you do not type the correct password, the computer lets you view, but not modify, system setup options.

NOTE: You can use **Password Status** in conjunction with **Setup Password** to protect the system password from unauthorized changes.

Deleting or Changing an Existing Setup Password

To change an existing setup password, you must know the setup password.

1. Enter system setup.
2. Type the setup password at the prompt.
3. Highlight **Setup Password** and press the left- or right-arrow key to delete the existing setup password.

   The setting changes to **Not Enabled**.

   To assign a new setup password, perform the steps in "Assigning a System Password."

4. Exit system setup.

Disabling a Forgotten Password and Setting a New Password

NOTICE: This process erases both the system and setup passwords.

CAUTION: Before you remove the computer cover, see "CAUTION: Safety Instructions."

1. Remove the computer cover.

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

2. Remove the jumper plug labeled "PSWD" from the jumper.

   See "Jumper Settings" to locate the password jumper.

3. Replace the computer cover.
4. Reconnect your computer and devices to electrical outlets and turn them on.

   This disables the existing password(s).

5. Enter system setup and verify that **Setup Password** is set to **Disabled**.
6. Exit system setup.

CAUTION: Before you remove the computer cover, see "CAUTION: Safety Instructions."

7. Remove the computer cover.

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

8. Replace the PSWD jumper plug.
9. Replace the computer cover and reconnect the computer and devices to electrical outlets and turn them on.

   This reenables the password feature. When you enter system setup, both password options appear as **Not Enabled**—the password feature is enabled but no password is assigned.

10. Assign a new system and/or setup password.

System Setup

Use system setup settings as follows:

- To set user-selectable options such as date and time or system password
- To read the current amount of memory or set the type of hard drive installed

Print the system setup screens (by pressing <Print Screen>) or record the information for future reference.

Before you use system setup, you must know the kind of drives installed in your computer. To confirm this information, see the Manufacturing Test Report that came with your computer, or find this information in the online **Dell Accessories** folder.

Entering System Setup

1. Turn on or restart your computer.

2. When `Press <F2> to Enter Setup` appears in the upper-right corner of the screen, press <F2> immediately.

If you wait too long and the Microsoft® Windows® logo appears, continue to wait until you see the Windows desktop. Then shut down your computer and try again.

NOTE: To ensure an orderly computer shutdown, see the documentation that came with your operating system.

System Setup Screens

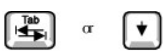
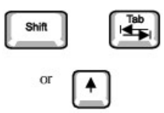
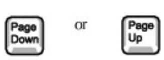
System setup screens display current configuration information for your computer. Information on the screen is organized into four areas:

- Title — the box at the top of all screens that lists the computer name
- Computer data — two boxes below the title box that display your computer processor, L2 cache, service tag, and the version number of the BIOS
- Options — a scrollable box listing options that define the configuration of your computer, including installed hardware, power conservation, and security features

  Fields to the right of the option titles contain settings or values. The fields that you can change appear bright on the screen. The fields that you cannot change (because they are set by the computer) appear less bright. When <Enter> appears to the right of an option title, press <Enter> to access a popup menu of additional options.

- Key functions — a line of boxes across the bottom of all screens that lists keys and their functions within system setup

System Setup Navigation Keys

Keys	Action
	Moves to the next field.
	Moves to the previous field.
 or spacebar or 	Cycles through the options in a field. In many fields, you can also type the appropriate value.
	Scrolls through help information.
	Enters the selected field's pop-up options menu.
	Exits system setup without restarting the computer and returns

Alt X	the computer to the boot routine.
Alt B	Exits system setup and restarts the computer, implementing any changes you have made.
Alt D	Resets the selected option to the default.

Boot Device Menu

This feature provides access to boot options and diagnostic features for your system. To access the boot device menu:

1. Turn on or restart your computer.
2. When `F12 = Boot Menu` appears in the upper-right corner of the screen, press <F12>.
3. Depending on your system configuration, you will see one or more of the options described in the following two sections.

Boot Options

These options will change the boot sequence for the current boot only. Any subsequent boots will follow the order defined by the boot sequence field in system setup.

- **Normal** — The computer attempts to boot from the sequence of devices specified in system setup.
- **Diskette Drive** — The computer attempts to boot from the floppy drive. If the floppy disk in the drive is not bootable, or if no floppy disk is in the drive, the computer generates an error message.
- **Integrated NIC** — The computer attempts to boot from the network server. This option requires proper network setup and server configurations.
- **Hard Disk Drive C:** — The computer attempts to boot from the primary hard drive. If no operating system is on the drive, the computer generates an error message.
- **IDE CD-ROM Device** — The computer attempts to boot from the installed optical drive. If no device is in the drive, or if the CD has no operating system, the computer generates an error message.
- **USB Flash Device** — Insert the key into a USB port and restart the computer. When `F12 = Boot Menu` appears in the upper-right corner of the screen, press <F12>. The BIOS detects the key and adds the USB key option to the boot menu.

NOTE: To boot to a USB Flash Device, the device must be bootable. To make sure your device is bootable, check the device documentation or website.

System Setup and Diagnostics Options

- **System Setup** — The computer enters the system setup program.
- **IDE Drive Diagnostics** — The computer initiates the IDE Hard Drive Diagnostics program.

NOTE: The **Boot to the Utility Partition** option requires a Dell factory-installed image on the hard drive.

- **Boot to the Utility Partition** — The computer initiates the 32-bit Dell Diagnostics program.

Changing Boot Sequence for Future Boots

1. Enter system setup.
2. Use the arrow keys to highlight the **Boot Sequence** menu option and press <Enter> to access the pop-up menu.

NOTE: Write down your current boot sequence in case you want to restore it.

3. Press the up- and down-arrow keys to move through the list of devices.
4. Press the spacebar to enable or disable a device (enabled devices have a checkmark).
5. Press plus (+) or minus (–) to move a selected device up or down the list.

System Setup Options

To get additional information about any setup option, highlight the entry and press <F1>.

AC Power Recovery — determines what happens when AC power is restored to the computer.

- **Off** — Computer remains off when AC power is restored.
- **On** — Computer starts when AC power is restored.
- **Last** — Computer returns to the AC power state existing at the time that AC power was lost.

Asset Tag — displays the customer-programmable asset tag number for the computer if an asset tag number is assigned

Auto Power On — sets time and days of week to turn on the computer automatically. Choices are every day or every Monday through Friday.

Time is kept in a 24-hour format (*hours:minutes*). Change the start up time by pressing the right- or left-arrow keys to increase or decrease the numbers or type numbers in both the date and time fields.

Disabled is the default.

This feature does not work if you turn off your computer using a power strip or surge protector.

CPU ID — manufacturer's identification code for the installed microprocessor.

CPU Information

- **CPU Speed** — processor speed at which the computer boots.

  Press the left- or right-arrow key to toggle the **CPU Speed** option between the resident microprocessor's rated speed (the default) and a lower-compatibility speed. A change to this option takes effect immediately (no restart is necessary).

  To toggle between the rated processor speed and the compatibility speed while the computer is running in real mode, press <Ctrl><Alt><\>. (For keyboards that do not use American English, press <Ctrl><Alt><#>.)

- **Bus Speed** — speed of the microprocessor's system bus.
- **Processor ID** — manufacturer's identification code(s) for the installed microprocessor.
- **Clock Speed** — core speed at which the microprocessor(s) operates.
- **Cache Size** — size of the microprocessor's L2 cache.
- **Hyper-Threading**— enables or disables Hyper-Threading technology for operating systems that support Hyper-Threading. The default setting is **Disabled**.

Fastboot

- **On** (default) — Your computer boots in 10 seconds or less, skipping certain configurations and tests.
- **Off** — Your computer does not skip certain configurations and tests during the boot process.

HDD Priority

- HDD (default)
- USB Device

NOTE: To boot from a USB memory device, select the USB device and move it to make it the first device.

Integrated Devices — configures the following devices integrated with the system board:

- **Sound** — settings are **On (default)** or **Off**
- **USB Controller** — settings are **On or Off**
- **Network Interface Controller** — settings are **On** (default), **Off**, or **On w/ MBA**. Settings for **On w/ MBA** are **PXE**, **RPL**, **BootP**, or **NetWare** as the active boot mode
- **Mouse Port** — settings are **On** or **Off**
- **Parallel Port** — settings are **Mode**, **I/O Address**, and **DMA Channel**

  Mode settings are **PS/2**, **EPP**, **ECP**, **AT**, or **Off**. Set the **Mode** option according to the type of device connected to the parallel connector. To determine the correct mode to use, see the documentation that came with the device.

  I/O Address settings are **378h** (default), **278h**, or **3BCh.** The settings are not available when **Mode** is set to **Off.**

NOTE: You cannot set the parallel connector to **3BCh** if **Mode** is set to **EPP**.

  DMA Channel appears only when **Mode** is set to **ECP**. Settings are **DMA 1**, **DMA 3**, or **Off**.

- **USB Emulation** — settings are **On**, **Off, and No Boot.**

NOTE: No Boot disables booting from all USB devices.

Keyboard NumLock — settings are **On** and **Off** (does not apply to 84-key keyboards)

On — activates the rightmost bank of keys so they provide the mathematical and numeric functions shown at the top of each key.

Off — activates the rightmost bank of keys so they provide cursor-control functions shown by the label on the bottom of each key.

Memory Information — indicates amount of installed memory, computer memory speed, amount of video memory, and size of the display cache.

If You Have a Problem

If the computer generates a drive error message the first time you boot your computer after you install an IDE drive, your drive may not work with the automatic drive-type detect feature. Press <Alt><d> in any hard drive field to set the hard drive autoconfiguration feature.

During POST the computer scans the IDE channels for supported devices and generates a summary message. For example, if the computer detects that a hard drive is connected to the Primary channel and a CD drive is connected to the Secondary channel, it generates the following message:

```
Performing automatic IDE configuration...

Primary Master: IDE Disk Drive

Secondary Master: CD-ROM Reader
```

If the computer detects a device during the scan, it sets the device to **Auto** in system setup. If no device is listed, it sets the device setting to **Off** in system setup.

If your computer does not reset after you perform these steps, enter system setup and reset the computer to its original settings:

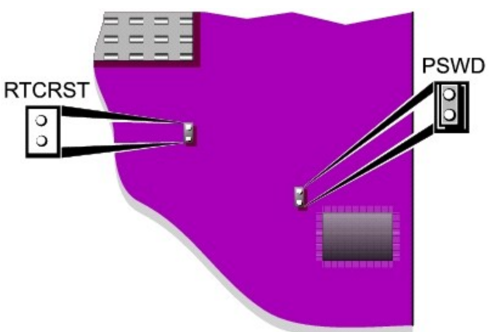
1. Restart your computer.
2. As the system restarts, press <F2> to enter system setup.
3. When the system setup screen appears, press <Alt><F> to load the default settings.

   The computer beeps when the settings are restored.

4. Verify that the time, date, and year are correct and the **Secondary Drive 0** option is set to **Auto**.
5. Press <Esc> and then press <Enter> to save your changes and exit.

   The computer restarts.

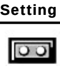
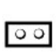
Jumper Settings



NOTICE: Ensure that your computer is turned off and unplugged before you change the jumper settings. Otherwise, damage to your computer or unpredictable results can occur.

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

To change a jumper setting, pull the plug off its pin(s) and carefully fit it down onto the pin(s) indicated.

Jumper	Setting	Description
PSWD	 (default)	Password features are enabled.
		Password features are disabled.
RTCRST		Real-time clock reset

jumpered	*unjumpered*

Power Button

NOTICE: To turn off your computer, perform an orderly computer shutdown when possible**.**

You can use the ACPI feature to configure the function of the Microsoft Windows 2000, and Windows XP operating systems.

Power Button Functions for Windows 2000 and Windows XP With ACPI Enabled

Action	Results		
	Computer Turned On and ACPI Enabled	**Computer in Standby Mode**	**Computer Turned Off**
Press power button	Computer goes into standby mode or turns off (depending on the operating system setup)	Computer turns on	Boots and computer turns on
Hold power button for 6 seconds*	Computer turns off	Computer turns off	Boots and computer turns on
*Pressing or holding the power button to shut down the computer may result in data loss. Use the power button to shut down the computer only if the operating system is not responding.			

Power Button Functions for Windows 2000 and Windows XP With ACPI Disabled

Action	Results		
	Computer Turned On and ACPI Disabled	**Computer in Suspend Mode**	**Computer Turned Off**
Press power button	Computer turns off immediately	Computer turns off immediately	Boots and computer turns on
Hold power button for 6 seconds*	Computer turns off	Computer turns off	Boots and computer turns on
*Pressing or holding the power button to shut down the computer may result in data loss. Use the power button to shut down the computer only if the operating system is not responding.			

Hung Computer

If the computer does not turn off when you press the power button, the computer may be hung. Press and hold the power button until the computer turns off completely (this process may take several seconds). If the computer is hung and the power button fails to function properly, unplug the AC power cable from the computer, wait for the computer to completely stop running, and plug in the AC power cable. If the computer does not restart, press the power button to restart the computer.

Hyper-Threading

Hyper-Threading is an Intel® technology that can enhance overall computer performance by allowing one physical microprocessor to function as two logical microprocessors, capable of performing certain tasks simultaneously. It is recommended that you use the Microsoft® Windows® XP SP1 or later operating system because Windows XP is optimized to take advantage of Hyper-Threading technology. While many programs can benefit from Hyper-Threading, some programs have not been optimized for Hyper-Threading and may require an update from the software manufacturer. Contact the software manufacturer for updates and information about using Hyper-Threading with your software.

To determine if your computer is using Hyper-Threading technology:

1. Click the **Start** button, right-click **My Computer**, and then click **Properties**.
2. Click **Hardware** and click **Device Manager**.
3. In the **Device Manager** window, click the plus (+) sign next to the processor type. If Hyper-Threading is enabled, the processor is listed twice.

You can enable or disable Hyper-Threading through system setup.

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Battery

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CAUTION: Before you begin this procedure, follow the steps in "CAUTION: Safety Instructions."

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

A coin-cell battery maintains computer configuration, date, and time information. The battery can last several years.

The battery may need replacing if an incorrect time or date is displayed during the boot routine along with a message such as:

```
Time-of-day not set - please run SETUP program
```

or

```
Invalid configuration information -
please run SETUP program
```

or

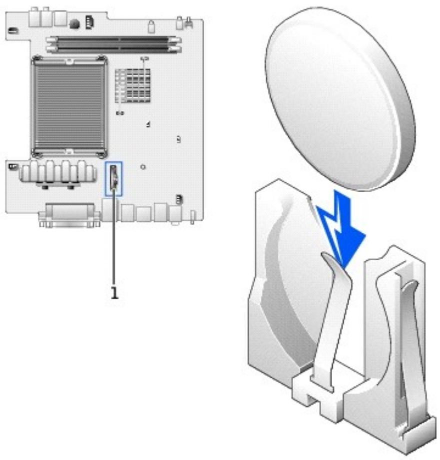
```
Strike the F1 key to continue,
F2 to run the setup utility
```

To determine whether you need to replace the battery, reenter the time and date in system setup and exit the program to save the information. Turn off your computer and disconnect it from the electrical outlet for a few hours, then reconnect the computer, turn it on, and enter system setup. If the date and time are not correct in system setup, replace the battery.

You can operate your computer without a battery; however, without a battery, the configuration information is erased if the computer is turned off or unplugged from the electrical outlet. In this case, you must enter system setup and reset the configuration options.

CAUTION: A new battery can explode if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

1. If you have not already done so, make a copy of your configuration information, found in system setup (see "System Setup").
2. Remove the computer cover.
3. Locate the battery socket labeled BATTERY (see "System Board Components").
4. To remove the battery, grip the battery and slightly twist it as you lift it out of the connector.
5. Insert the new battery into the socket with the side labeled "+" not facing the opening, and snap the battery down into place.



1	location of the battery connector

6. Replace the computer cover.
7. Reattach the stand (if used).
8. Replace the cable cover (if used).

NOTICE: To connect a network cable, first plug the cable into the network wall jack and then plug it into the computer.

9. Connect your computer to the adapter cable and devices to electrical outlets, and turn them on.

After you replace the cover, the chassis intrusion detector, if enabled, causes the following message to appear on the screen at the next computer start-up:

```
ALERT! Cover was previously removed.
```

10. Reset the chassis intrusion detector by changing the **Chassis Intrusion** option to **Enabled** or **Enabled-Silent**.

NOTE: If a setup password has been assigned by someone else, contact your network administrator for information on resetting the chassis intrusion detector.

11. Enter system setup and restore the settings you recorded in step 1.
12. Properly dispose of the old battery.

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Cleaning Your Computer

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Before Cleaning Your Computer

CAUTION: Before you begin any of the procedures in this section, follow the steps in "CAUTION: Safety Instructions."

1. Perform an orderly computer shutdown using the operating system menu.

NOTICE: To disconnect a network cable, first unplug the cable from your computer, and then unplug it from the network wall jack.

2. Turn off any attached devices and disconnect them from their electrical outlets.
3. Disconnect the computer power cable from the wall outlet, and then press the power button to ground the system board.

Computer, Keyboard, and Monitor

- Use a vacuum cleaner with a brush attachment to remove dust from the slots and holes on your computer and between the keys on the keyboard.

NOTICE: Do not wipe the monitor screen with any soap or alcohol solution. Doing so may damage the antiglare coating.

- To clean your monitor screen, lightly dampen a soft, clean cloth with water. If possible, use a special screen-cleaning tissue or solution suitable for the monitor's antistatic coating.
- Wipe the keyboard, computer, and plastic part of the monitor with a soft cleaning cloth moistened with a solution of three parts water and one part liquid dishwashing detergent. Wipe off stubborn stains with a cloth lightly moistened with isopropyl alcohol.

Do not soak the cloth in the solution or allow the solution to drip inside your computer or keyboard.

Mouse

If your screen cursor skips or moves abnormally, clean the mouse. To clean a nonoptical mouse:

1. Turn the retainer ring on the underside of your mouse counterclockwise, and then remove the ball.
2. Wipe the ball with a clean, lint-free cloth.
3. Blow carefully into the ball cage to dislodge dust and lint.
4. If a buildup of dirt exists on the rollers inside the ball cage, clean the rollers with a cotton swab moistened lightly with isopropyl alcohol.
5. Recenter the rollers in their channels if they are misaligned. Ensure that fluff from the swab is not left on the rollers.
6. Replace the ball and retainer ring. Turn the retainer ring clockwise until it clicks into place.

Floppy Drive

NOTICE: Do not attempt to clean drive heads with a swab. You might accidentally misalign the heads, which prevents the drive from operating.

Clean your floppy drive using a commercially available cleaning kit. These kits contain pretreated floppy disks to remove contaminants that accumulate during normal operation.

CDs and DVDs

1. Hold the disc by its outer edge. It is okay to touch the inside edge of the center hole.

NOTICE: To prevent damaging the surface, do not wipe in a circular motion around the disc.

2. With a soft, lint-free cloth, gently wipe the bottom of the disc (the unlabeled side) in a straight line from the center to the outer edge of the disc.

   For stubborn dirt, try using water or a diluted solution of water and mild soap. You can also purchase commercial products that clean discs and provide some protection from dust, fingerprints, and scratches. Cleaning products for CDs are safe to use on DVDs.

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Module Bay

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You can install a Dell™ portable device such as a floppy drive, CD drive, CD-RW drive, DVD drive, DVD/CD-RW drive, or second hard drive in the module bay.

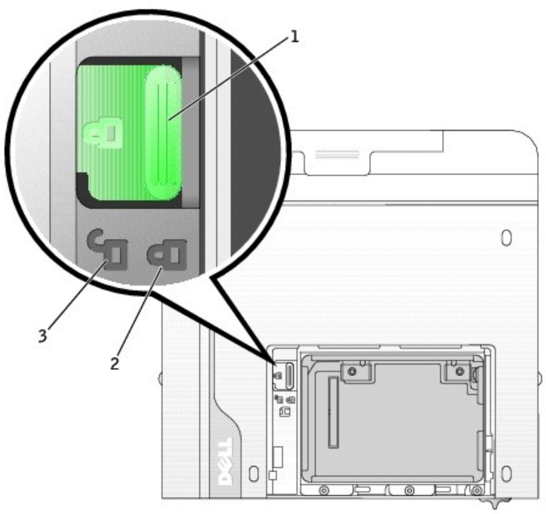
Your Dell computer ships with either a floppy drive or an airbay (filler blank) installed in the module bay.

NOTICE: To prevent damage to devices, place them in a safe, dry place when they are not installed in the computer. Avoid pressing down on them or placing heavy objects on top of them.

Installing a CD/DVD Device When Your Computer Is Turned Off

To install a CD/DVD device or second hard drive:

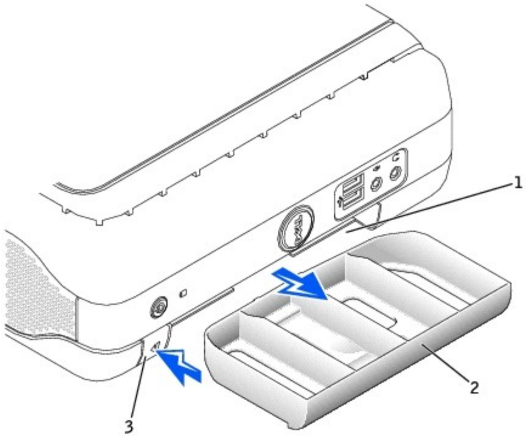
1. If the module bay is locked, open the hard-drive door and move the module locking switch to the unlocked position.



1	module locking switch
2	locked position
3	unlocked position

2. While pressing the module eject button, grasp the airbay and pull it out of the module bay.

NOTICE: Do not place any heavy objects on top of the computer. Doing so may cause difficulty in removing a module device.



1	module bay
2	airbay
3	module eject button

3. Slide the device into the module bay.
4. If desired, you may lock the device in the module bay by moving the module locking switch to the locked position.
5. Replace the hard-drive door.

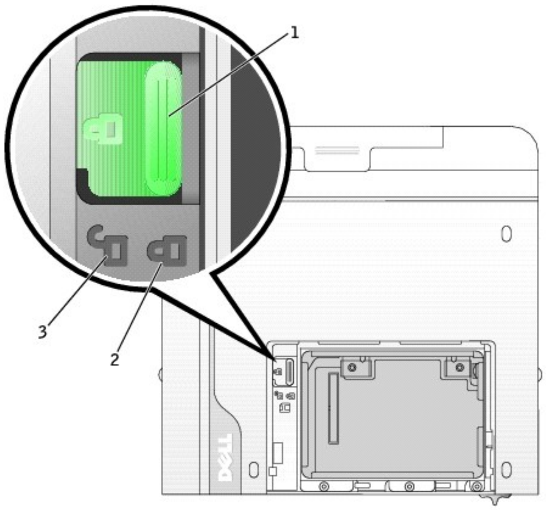
To remove a floppy drive, follow steps 1 and 2 in the previous procedure.

Installing a CD/DVD Device When Your Computer Is Running

Microsoft Windows® XP

To install a CD/DVD device or second hard drive:

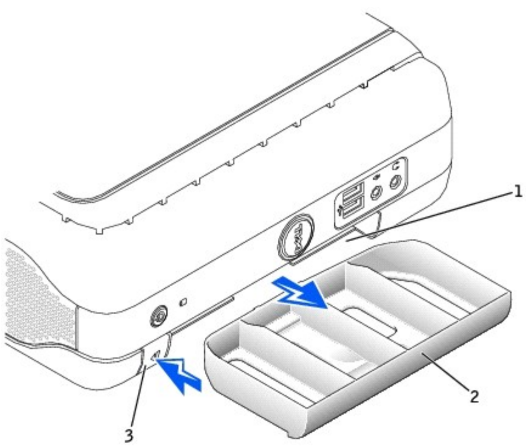
1. Double-click the **Safely Remove Hardware** icon on the taskbar.
2. Click the device you want to eject.
3. If the module bay is locked, open the hard-drive door and move the module locking switch to the unlocked position.



1	module locking switch
2	locked position
3	unlocked position

4. While pressing the module eject button, grasp the airbay and pull it out of the module bay.

NOTICE: Do not place any heavy objects on top of the computer. Doing so may cause difficulty in removing a module device.



1	module bay
2	airbay
3	module eject button

5. Slide the device into the module bay.
6. If desired, you may lock the device in the module bay by moving the module locking switch to the locked position.
7. Replace the hard-drive door.

Windows XP automatically recognizes the new device.

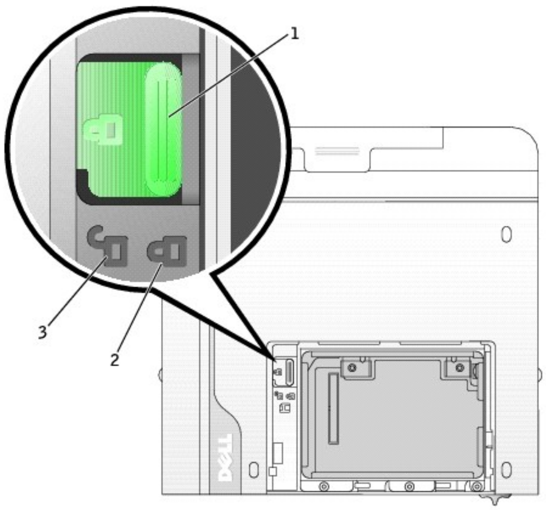
8. If necessary, enter your password to unlock your computer.

Installing a CD/DVD Device When Your Computer Is Running

Windows 2000

To install a CD/DVD device or second hard drive:

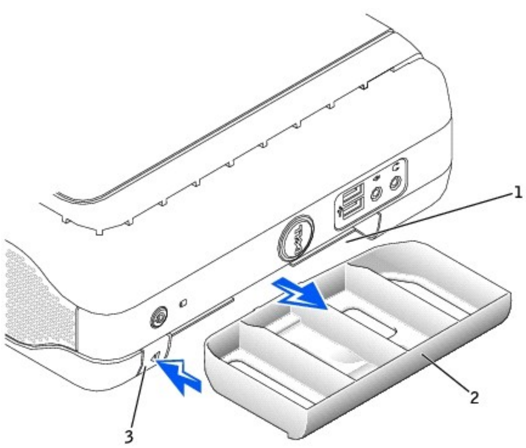
1. Click the **Unplug or Eject Hardware** icon on the taskbar.
2. Click the device you want to eject and click **Stop**.
3. If the module bay is locked, open the hard-drive door and move the module locking switch to the unlocked position.



1	module locking switch
2	locked position
3	unlocked position

4. While pressing the module eject button, grasp the airbay and pull it out of the module bay.

NOTICE: Do not place any heavy objects on top of the computer. Doing so may cause difficulty in removing a module device.



1	module bay
2	airbay
3	module eject button

5. Slide the device into the module bay.
6. If desired, you may lock the device in the module bay by moving the module locking switch to the locked position.
7. Replace the hard-drive door.
8. When the operating system recognizes the new device, click **Close**.

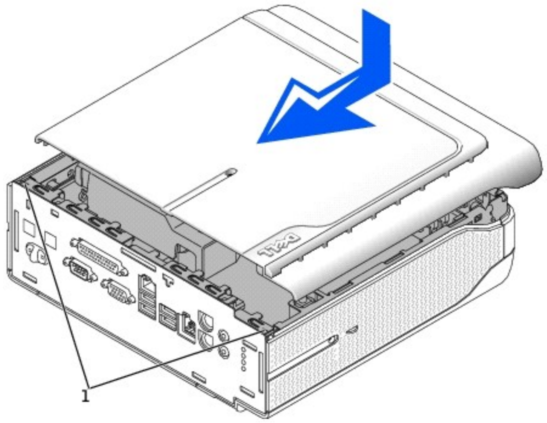
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Replacing the Computer Cover

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1. Ensure that no tools or extra parts are left inside the computer.
2. Replace the cover:
   a. Lower and align the cover with the two lines on the metal computer frame.
   a. Slide the cover until you hear or feel it click into place.



1	alignment lines

NOTICE: To connect a network cable, first plug the cable into the network wall jack, and then plug it into the computer.

3. Connect your computer to its power adapter and connect devices to electrical outlets, and turn them on.

After you replace the cover, the chassis intrusion detector, if enabled, causes the following message to appear on the screen at the next computer start-up:

```
ALERT! Cover was previously removed.
```

4. Reset the chassis intrusion detector by changing **Chassis Intrusion** to **Enabled** or **Enabled-Silent**.

NOTE: If a setup password has been assigned by someone else, contact your network administrator for information on resetting the chassis intrusion detector.

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Removing the Computer Cover

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CAUTION: Before you begin this procedure, follow the steps in "CAUTION: Safety Instructions."

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

1. Shut down the computer through the **Start** menu.
2. Ensure that your computer and attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your computer, turn them off now.

NOTICE: To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.

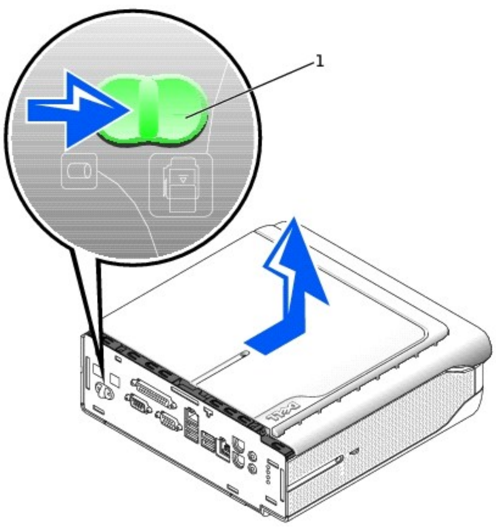
3. Remove the cable cover, if it is attached.
4. Disconnect any telephone or telecommunication lines from the computer.
5. Disconnect your computer and all attached devices from their electrical outlets, and then press the power button to ground the system board.
6. If your computer has the stand in the horizontal position, remove the stand.

CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before removing the cover.

7. Remove the computer cover.

NOTICE: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

   a. Press the cover *r*elease button as shown in the illustration.
   b. Slide the computer cover forward 1/2 inch (1 cm), or until it stops, and then raise the cover.



1	release button

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Documentation for Your Computer

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Ergonomic Computing Habits

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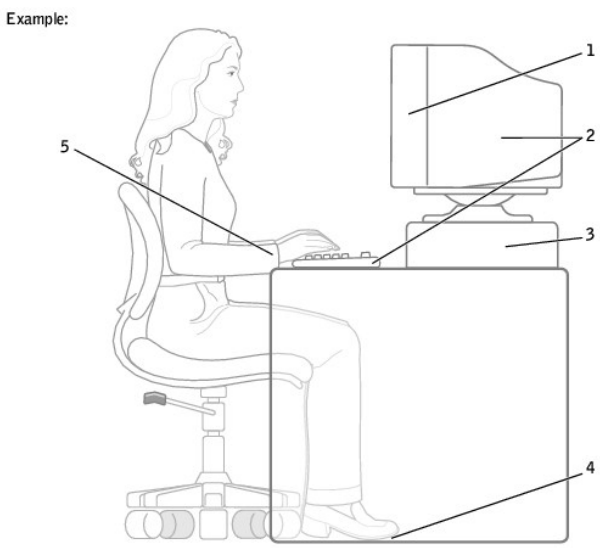
CAUTION: Improper or prolonged keyboard use may result in injury.

CAUTION: Viewing the monitor screen for extended periods of time may result in eye strain.

For comfort and efficiency, observe the following ergonomic guidelines when setting up and using your computer workstation:

- Position your computer so that the monitor and keyboard are directly in front of you as you work. Special shelves are commercially available to help you correctly position your keyboard.
- Set the monitor at a comfortable viewing distance (usually 450 to 610 millimeters [18 to 24 inches] from your eyes).
- Make sure the monitor screen is at eye level or slightly lower when you are sitting in front of the monitor.
- Adjust the tilt of the monitor, its contrast and brightness settings, and the lighting around you (such as overhead lights, desk lamps, and the curtains or blinds on nearby windows) to minimize reflections and glare on the monitor screen.
- Use a chair that provides good lower back support.
- Keep your forearms horizontal with your wrists in a neutral, comfortable position while using the keyboard or mouse.
- Always leave space to rest your hands while using the keyboard or mouse.
- Let your upper arms hang naturally at your sides.
- Ensure that your feet are resting flat on the floor.
- When sitting, make sure the weight of your legs is on your feet and not on the front of your chair seat. Adjust your chair's height or use a footrest, if necessary, to maintain proper posture.
- Vary your work activities. Try to organize your work so that you do not have to type for extended periods of time. When you stop typing, try to do things that use both hands.

For more information about ergonomic computing habits, see the BSR/HFES 100 standard, which can be purchased on the Human Factors and Ergonomics Society (HFES) website at: **www.hfes.org/publications/HFES100.html**



1	monitor screen at or below eye level	4	feet flat on the floor
2	monitor and keyboard positioned directly in front of the user	5	wrists relaxed and flat
3	monitor stand		

References:

1. American National Standards Institute. *ANSI/HFES 100: American National Standards for Human Factors Engineering of Visual Display Terminal Workstations*. Santa Monica, CA: Human Factors Society, Inc., 1988.

2. Human Factors and Ergonomics Society. *BSR/HFES 100 Draft standard for trial use: Human Factors Engineering of Computer Workstations*. Santa Monica, CA: Human Factors and Ergonomics Society, 2002.

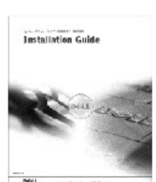
3. International Organization for Standardization (ISO). *ISO 9241 Ergonomics requirements for office work with visual display terminals (VDTs)*. Geneva, Switzerland: International Organization for Standardization, 1992.

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Finding Information for Your Computer

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What Are You Looking For?	Find It Here
• A diagnostic program for my computer • Drivers for my computer • My computer documentation • My device documentation	**Drivers and Utilities CD (also known as the ResourceCD)**  You can use this CD to access documentation, reinstall drivers, or run diagnostics tools.
• How to set up my computer • Troubleshooting information • Tools and utilities • Warranty information	**Setup and Quick Reference Guide** 
• Express Service Code and Service Tag Number • Microsoft® Windows® License Label	**Express Service Code and Product Key**  Located on your nonremovable chassis cover.
• How to reinstall my operating system	**Operating System CD and Installation Guide**   If you reinstall your operating system, use the *Drivers and Utilities* CD to reinstall drivers for the devices that came with your computer.
• How to remove and replace parts • Technical specifications • How to configure system	**User's Guides Icon**

settings • How to troubleshoot and solve problems	Depending on your operating system, double-click the **User's Guides** icon on your desktop or click the **Start** button and then click **Help and Support** to access the electronic documentation stored on your hard drive.
• Latest drivers for my computer • Answers to technical service and support questions • Online discussions with other users and technical support • Documentation for my computer	**Dell Support website** **support.dell.com** The Dell Support website provides several online tools, including: • Knowledge Base — hints, tips, and online courses • Customer Forum — online discussion with other Dell customers • Upgrades — upgrade information for components, such as memory, the hard drive, and the operating system • Customer Care — contact information, order status, warranty, and repair information • Downloads — drivers, patches, and software updates • Reference — computer documentation, product specifications, and white papers
• Service call status • Top technical issues for my computer • Frequently asked questions • File downloads • Details on my computer's configuration • Service contract for my computer	**Dell Premier Support Website — premiersupport.dell.com** The Dell Premier Support website is customized for corporate, government, and education customers. This site may not be available in all regions.
• How to use Windows XP • Documentation for my computer and devices	**Windows XP Help and Support Center** 1. Click the **Start** button, and then click **Help and Support**. 2. In the Search field, type a word or phrase that describes your problem, and then click the arrow icon. 3. Click the topic that describes your problem. 4. Follow the instructions shown on the screen.

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Getting Help

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Technical Assistance

If you need help with a technical problem, Dell is ready to assist you.

NOTE: Remove all external security features (Kensington locks and cable cover) before you call technical support.

CAUTION: If you need to remove the computer covers, first disconnect the computer power and modem cables from all electrical outlets.

1. Complete the procedures in "Solving Problems."
2. Run the Dell Diagnostics.
3. Make a copy of the Diagnostics Checklist and fill it out.
4. Use Dell's extensive suite of online services available at Dell Support (**support.dell.com**) for help with installation and troubleshooting procedures.
5. If the preceding steps have not resolved the problem, contact Dell.

NOTE: Call technical support from a telephone near or at the computer so that technical support can assist you with any necessary procedures.

NOTE: Dell's Express Service Code system may not be available in all countries.

When prompted by Dell's automated telephone system, enter your Express Service Code to route the call directly to the proper support personnel. If you do not have an Express Service Code, open the **Dell Accessories** folder, double-click the **Express Service Code** icon, and follow the directions.

For instructions on using the technical support service, see "Technical Support Service."

NOTE: Some of the following services are not always available in all locations outside the continental U.S. Call your local Dell representative for information on availability.

Online Services

You can access Dell Support at **support.dell.com**. Select your region on the **WELCOME TO DELL SUPPORT** page, and fill in the requested details to access help tools and information.

You can contact Dell electronically using the following addresses:

- World Wide Web

  www.dell.com/

  www.dell.com/ap/ (for Asian/Pacific countries only)

  www.euro.dell.com (for Europe only)

www.dell.com/la/ (for Latin American countries)

- Anonymous file transfer protocol (FTP)

ftp.dell.com/

Log in as user: anonymous, and use your e-mail address as your password.

- Electronic Support Service

mobile_support@us.dell.com

support@us.dell.com

apsupport@dell.com (for Asian/Pacific countries only)

support.euro.dell.com (for Europe only)

- Electronic Quote Service

sales@dell.com

apmarketing@dell.com (for Asian/Pacific countries only)

- Electronic Information Service

info@dell.com

AutoTech Service

Dell's automated technical support service—AutoTech—provides recorded answers to the questions most frequently asked by Dell customers about their portable and desktop computers.

When you call AutoTech, use your touch-tone telephone to select the subjects that correspond to your questions.

The AutoTech service is available 24 hours a day, 7 days a week. You can also access this service through the technical support service. For the telephone number to call, see the contact numbers for your region.

Automated Order-Status Service

To check on the status of any Dell products that you have ordered, you can go to **support.dell.com**, or you can call the automated order-status service. A recording prompts you for the information needed to locate and report on your order. For the telephone number to call, see the contact numbers for your region.

Technical Support Service

Dell's technical support service is available 24 hours a day, 7 days a week, to answer your questions about Dell hardware. Our technical support staff uses computer-based diagnostics to provide fast, accurate answers.

To contact Dell's technical support service, see "Technical Assistance" and then call the number for your country as listed in "Contacting Dell."

Problems With Your Order

If you have a problem with your order, such as missing parts, wrong parts, or incorrect billing, contact Dell for customer assistance. Have your invoice or packing slip handy when you call. For the telephone number to call, see the contact numbers for your region.

Product Information

If you need information about additional products available from Dell, or if you would like to place an order, visit the Dell website at **www.dell.com**. For the telephone number to call to speak to a sales specialist, see the contact numbers for your region.

Returning Items for Warranty Repair or Credit

Prepare all items being returned, whether for repair or credit, as follows:

1. Call Dell to obtain a Return Material Authorization Number, and write it clearly and prominently on the outside of the box.

   For the telephone number to call, see the contact numbers for your region.

2. Include a copy of the invoice and a letter describing the reason for the return.
3. Include a copy of the Diagnostics Checklist indicating the tests you have run and any error messages reported by the Dell Diagnostics.
4. Include any accessories that belong with the item(s) being returned (power cables, software floppy disks, guides, and so on) if the return is for credit.
5. Pack the equipment to be returned in the original (or equivalent) packing materials.

You are responsible for paying shipping expenses. You are also responsible for insuring any product returned, and you assume the risk of loss during shipment to Dell. Collect On Delivery (C.O.D.) packages are not accepted.

Returns that are missing any of the preceding requirements will be refused at Dell's receiving dock and returned to you.

Before You Call

NOTE: Have your Express Service Code ready when you call. The code helps Dell's automated- support telephone system direct your call more efficiently.

Remember to fill out the Diagnostics Checklist. If possible, turn on your computer before you call Dell for technical assistance and call from a telephone at or near the computer. You may be asked to type some commands at the keyboard, relay detailed information during operations, or try other troubleshooting steps possible only at the computer itself. Ensure that the computer documentation is available.

CAUTION: Before working inside your computer, read "CAUTION: Safety Instructions."

Diagnostics Checklist
Name:
Date:
Address:
Phone number:
Service tag (bar code on the back of the computer):
Express Service Code:

Return Material Authorization Number (if provided by Dell support technician):
Operating system and version:
Devices:
Expansion cards:
Are you connected to a network? Yes No
Network, version, and network adapter:
Programs and versions:
See your operating system documentation to determine the contents of the system's start-up files. If the computer is connected to a printer, print each file. Otherwise, record the contents of each file before calling Dell.
Error message, beep code, or diagnostic code:
Description of problem and troubleshooting procedures you performed:

Contacting Dell

To contact Dell electronically, you can access the following websites:

- **www.dell.com**
- **support.dell.com** (technical support)
- **premiersupport.dell.com** (technical support for educational, government, healthcare, and medium/large business customers, including Premier, Platinum, and Gold customers)

For specific web addresses for your country, find the appropriate country section in the table below.

NOTE: Toll-free numbers are for use within the country for which they are listed.

When you need to contact Dell, use the electronic addresses, telephone numbers, and codes provided in the following table. If you need assistance in determining which codes to use, contact a local or an international operator.

Country (City) **International Access Code** **Country Code** **City Code**	**Department Name or Service Area,** **Website and E-Mail Address**	**Area Codes,** **Local Numbers, and** **Toll-Free Numbers**
Anguilla	General Support	toll-free: 800-335-0031
Antigua and Barbuda	General Support	1-800-805-5924
Argentina (Buenos Aires) International Access Code: **00** Country Code: **54** City Code: **11**	Website: **www.dell.com.ar**	
	Tech Support and Customer Care	toll-free: 0-800-444-0733
	Sales	0-810-444-3355
	Tech Support Fax	11 4515 7139
	Customer Care Fax	11 4515 7138
Aruba	General Support	toll-free: 800-1578
Australia (Sydney) International Access Code: **0011** Country Code: **61** City Code: **2**	E-mail (Australia): au_tech_support@dell.com	
	E-mail (New Zealand): nz_tech_support@dell.com	
	Home and Small Business	1-300-65-55-33
	Government and Business	toll-free: 1-800-633-559
	Preferred Accounts Division (PAD)	toll-free: 1-800-060-889
	Customer Care	toll-free: 1-800-819-339
	Corporate Sales	toll-free: 1-800-808-385
	Transaction Sales	toll-free: 1-800-808-312
	Fax	toll-free: 1-800-818-341
Austria (Vienna) International Access Code: **900** Country Code: **43** City Code: **1**	Website: **support.euro.dell.com**	
	E-mail: tech_support_central_europe@dell.com	
	Home/Small Business Sales	01 795 67602
	Home/Small Business Fax	01 795 67605
	Home/Small Business Customer Care	01 795 67603
	Preferred Accounts/Corporate Customer Care	0660 8056
	Home/Small Business Technical Support	01 795 67604
	Preferred Accounts/Corporate Technical Support	0660 8779
	Switchboard	01 491 04 0
Bahamas	General Support	toll-free: 1-866-278-6818
Barbados	General Support	1-800-534-3066

Belgium (Brussels) International Access Code: **00** Country Code: **32** City Code: **2**	Website: **support.euro.dell.com**	
	E-mail: tech_be@dell.com	
	E-mail for French Speaking Customers: **support.euro.dell.com/be/fr/emaildell/**	
	Technical Support	02 481 92 88
	Customer Care	02 481 91 19
	Home/Small Business Sales	toll-free: 0800 16884
	Corporate Sales	02 481 91 00
	Fax	02 481 92 99
	Switchboard	02 481 91 00
Bermuda	General Support	1-800-342-0671
Bolivia	General Support	toll-free: 800-10-0238
Brazil International Access Code: **00** Country Code: **55** City Code: **51**	Website: **www.dell.com/br**	
	Customer Support, Technical Support	0800 90 3355
	Tech Support Fax	51 481 5470
	Customer Care Fax	51 481 5480
	Sales	0800 90 3390
British Virgin Islands	General Support	toll-free: 1-866-278-6820
Brunei Country Code: **673**	Customer Technical Support (Penang, Malaysia)	604 633 4966
	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales (Penang, Malaysia)	604 633 4955
Canada (North York, Ontario) International Access Code: **011**	Automated Order-Status System	toll-free: 1-800-433-9014
	AutoTech (automated technical support)	toll-free: 1-800-247-9362
	TechFax	toll-free: 1-800-950-1329
	Customer Care (home/small business)	toll-free: 1-800-847-4096
	Customer Care (med./large business, government)	toll-free: 1-800-326-9463
	Technical Support (home/small business)	toll-free: 1-800-847-4096
	Technical Support (med./large bus., government)	toll-free: 1-800-847-4096
	Sales (direct sales—from outside Toronto)	toll-free: 1-800-387-5752
	Sales (direct sales—from within Toronto)	416 758-2200
	Sales (federal government, education, and medical)	toll-free: 1-800-567-7542
Cayman Islands	General Support	1-800-805-7541
Chile (Santiago) Country Code: **56** City Code: **2**	Sales, Customer Support, and Technical Support	toll-free: 1230-020-4823
China (Xiamen) Country Code: **86** City Code: **592**	Tech Support website: **support.ap.dell.com/china**	
	Tech Support E-mail: cn_support@dell.com	
	Tech Support Fax	818 1350
	Home and Small Business Technical Support	toll-free: 800 858 2437
	Corporate Accounts Technical Support	toll-free: 800 858 2333
	Customer Experience	toll-free: 800 858 2060
	Home and Small Business	toll-free: 800 858 2222
	Preferred Accounts Division	toll-free: 800 858 2062
	Large Corporate Accounts GCP	toll-free: 800 858 2055
	Large Corporate Accounts Key Accounts	toll-free: 800 858 2628
	Large Corporate Accounts North	toll-free: 800 858 2999
	Large Corporate Accounts North Government and Education	toll-free: 800 858 2955
	Large Corporate Accounts East	toll-free: 800 858 2020
	Large Corporate Accounts East Government and Education	toll-free: 800 858 2669
	Large Corporate Accounts Queue Team	toll-free: 800 858 2572
	Large Corporate Accounts South	toll-free: 800 858 2355
	Large Corporate Accounts West	toll-free: 800 858 2811
	Large Corporate Accounts Spare Parts	toll-free: 800 858 2621
Colombia	General Support	980-9-15-3978
Costa Rica	General Support	0800-012-0435
Czech Republic (Prague) International Access Code: **00**	Website: **support.euro.dell.com**	
	E-mail: czech_dell@dell.com	
	Technical Support	02 22 83 27 27

Country Code: **420** City Code: **2**	Customer Care	02 22 83 27 11
	Fax	02 22 83 27 14
	TechFax	02 22 83 27 28
	Switchboard	02 22 83 27 11
Denmark (Copenhagen) International Access Code: **00** Country Code: **45**	Website: **support.euro.dell.com**	
	E-mail Support (portable computers): den_nbk_support@dell.com	
	E-mail Support (desktop computers): den_support@dell.com	
	E-mail Support (servers): Nordic_server_support@dell.com	
	Technical Support	7023 0182
	Customer Care (Relational)	7023 0184
	Home/Small Business Customer Care	3287 5505
	Switchboard (Relational)	3287 1200
	Fax Switchboard (Relational)	3287 1201
	Switchboard (Home/Small Business)	3287 5000
	Fax Switchboard (Home/Small Business)	3287 5001
Dominica	General Support	toll-free: 1-866-278-6821
Dominican Republic	General Support	1-800-148-0530
Ecuador	General Support	toll-free: 999-119
El Salvador	General Support	01-899-753-0777
Finland (Helsinki) International Access Code: **990** Country Code: **358** City Code: **9**	Website: **support.euro.dell.com**	
	E-mail: fin_support@dell.com	
	E-mail Support (servers): Nordic_support@dell.com	
	Technical Support	09 253 313 60
	Technical Support Fax	09 253 313 81
	Relational Customer Care	09 253 313 38
	Home/Small Business Customer Care	09 693 791 94
	Fax	09 253 313 99
	Switchboard	09 253 313 00
France (Paris) (Montpellier) International Access Code: **00** Country Code: **33** City Codes: **(1) (4)**	Website: **support.euro.dell.com**	
	E-mail: **support.euro.dell.com/fr/fr/emaildell/**	
	Home and Small Business	
	Technical Support	0825 387 270
	Customer Care	0825 823 833
	Switchboard	0825 004 700
	Switchboard (calls from outside of France)	04 99 75 40 00
	Sales	0825 004 700
	Fax	0825 004 701
	Fax (calls from outside of France)	04 99 75 40 01
	Corporate	
	Technical Support	0825 004 719
	Customer Care	0825 338 339
	Switchboard	01 55 94 71 00
	Sales	01 55 94 71 00
	Fax	01 55 94 71 01
Germany (Langen) International Access Code: **00** Country Code: **49** City Code: **6103**	Website: **support.euro.dell.com**	
	E-mail: tech_support_central_europe@dell.com	
	Technical Support	06103 766-7200
	Home/Small Business Customer Care	0180-5-224400
	Global Segment Customer Care	06103 766-9570
	Preferred Accounts Customer Care	06103 766-9420
	Large Accounts Customer Care	06103 766-9560
	Public Accounts Customer Care	06103 766-9555
	Switchboard	06103 766-7000
Grenada	General Support	toll-free: 1-866-540-3355
Guatemala	General Support	1-800-999-0136
Guyana	General Support	toll-free: 1-877-270-4609
Hong Kong International Access Code: **001**	Technical Support (Dimension™ and Inspiron™)	296 93188
	Technical Support (OptiPlex™, Latitude™, and Dell Precision™)	296 93191
	Customer Service (non-technical, post-sales issues)	800 93 8291

Country Code: **852**	Transaction Sales	toll-free: 800 96 4109
	Large Corporate Accounts HK	toll-free: 800 96 4108
	Large Corporate Accounts GCP HK	toll-free: 800 90 3708
India	Technical Support	1600 33 8045
	Sales	1600 33 8044
Ireland (Cherrywood) International Access Code: **16** Country Code: **353** City Code: **1**	Website: **support.euro.dell.com**	
	E-mail: dell_direct_support@dell.com	
	Ireland Technical Support	1850 543 543
	U.K. Technical Support (dial within U.K. only)	0870 908 0800
	Home User Customer Care	01 204 4095
	Small Business Customer Care	01 204 4444
	U.K. Customer Care (dial within U.K. only)	0870 906 0010
	Corporate Customer Care	01 204 4003
	Ireland Sales	01 204 4444
	U.K. Sales (dial within U.K. only)	0870 907 4000
	SalesFax	01 204 0144
	Fax	01 204 5960
	Switchboard	01 204 4444
Italy (Milan) International Access Code: **00** Country Code: **39** City Code: **02**	Website: **support.euro.dell.com**	
	E-mail: **support.euro.dell.com/it/it/emaildell/**	
	Home and Small Business	
	Technical Support	02 577 826 90
	Customer Care	02 696 821 14
	Fax	02 696 821 13
	Switchboard	02 696 821 12
	Corporate	
	Technical Support	02 577 826 90
	Customer Care	02 577 825 55
	Fax	02 575 035 30
	Switchboard	02 577 821
Jamaica	General Support (dial from within Jamaica only)	1-800-682-3639
Japan (Kawasaki) International Access Code: **001** Country Code: **81** City Code: **44**	Website: **support.jp.dell.com**	
	Technical Support (servers)	toll-free: 0120-198-498
	Technical Support outside of Japan (servers)	81-44-556-4162
	Technical Support (Dimension™ and Inspiron™)	toll-free: 0120-198-226
	Technical Support outside of Japan (Dimension and Inspiron)	81-44-520-1435
	Technical Support (Dell Precision™, OptiPlex™, and Latitude™)	toll-free:0120-198-433
	Technical Support outside of Japan (Dell Precision, OptiPlex, and Latitude)	81-44-556-3894
	24-Hour Automated Order Service	044-556-3801
	Customer Care	044-556-4240
	Business Sales Division (up to 400 employees)	044-556-1465
	Preferred Accounts Division Sales (over 400 employees)	044-556-3433
	Large Corporate Accounts Sales (over 3500 employees)	044-556-3430
	Public Sales (government agencies, educational institutions, and medical institutions)	044-556-1469
	Global Segment Japan	044-556-3469
	Individual User	044-556-1760
	Faxbox Service	044-556-3490
	Switchboard	044-556-4300
Korea (Seoul) International Access Code: **001** Country Code: **82** City Code: **2**	Technical Support	toll-free: 080-200-3800
	Sales	toll-free: 080-200-3600
	Customer Service (Seoul, Korea)	toll-free: 080-200-3800
	Customer Service (Penang, Malaysia)	604 633 4949
	Fax	2194-6202
	Switchboard	2194-6000
Latin America	Customer Technical Support (Austin, Texas, U.S.A.)	512 728-4093
	Customer Service (Austin, Texas, U.S.A.)	512 728-3619
	Fax (Technical Support and Customer Service) (Austin, Texas, U.S.A.)	512 728-3883
	Sales (Austin, Texas, U.S.A.)	512 728-4397

	SalesFax (Austin, Texas, U.S.A.)	512 728-4600 or 512 728-3772
Luxembourg International Access Code: **00** Country Code: **352**	Website: **support.euro.dell.com**	
	E-mail: tech_be@dell.com	
	Technical Support (Brussels, Belgium)	02 481 92 88
	Home/Small Business Sales (Brussels, Belgium)	toll-free: 080016884
	Corporate Sales (Brussels, Belgium)	02 481 91 00
	Customer Care (Brussels, Belgium)	02 481 91 19
	Fax (Brussels, Belgium)	02 481 92 99
	Switchboard (Brussels, Belgium)	02 481 91 00
Macao Country Code: **853**	Technical Support	toll-free: 0800 582
	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales	toll-free: 0800 581
Malaysia (Penang) International Access Code: **00** Country Code: **60** City Code: **4**	Technical Support	toll-free: 1 800 888 298
	Customer Service	04 633 4949
	Transaction Sales	toll-free: 1 800 888 202
	Corporate Sales	toll-free: 1 800 888 213
Mexico International Access Code: **00** Country Code: **52**	Customer Technical Support	001-877-384-8979 or 001-877-269-3383
	Sales	50-81-8800 or 01-800-888-3355
	Customer Service	001-877-384-8979 or 001-877-269-3383
	Main	50-81-8800 or 01-800-888-3355
Montserrat	General Support	toll-free: 1-866-278-6822
Netherlands Antilles	General Support	001-800-882-1519
Netherlands (Amsterdam) International Access Code: **00** Country Code: **31** City Code: **20**	Website: **support.euro.dell.com** E-mail (Technical Support): (Enterprise): nl_server_support@dell.com (Latitude): nl_latitude_support@dell.com (Inspiron): nl_inspiron_support@dell.com (Dimension): nl_dimension_support@dell.com (OptiPlex): nl_optiplex_support@dell.com (Dell Precision): nl_workstation_support@dell.com	
	Technical Support	020 674 45 00
	Technical Support Fax	020 674 47 66
	Home/Small Business Customer Care	020 674 42 00
	Relational Customer Care	020 674 4325
	Home/Small Business Sales	020 674 55 00
	Relational Sales	020 674 50 00
	Home/Small Business Sales Fax	020 674 47 75
	Relational Sales Fax	020 674 47 50
	Switchboard	020 674 50 00
	Switchboard Fax	020 674 47 50
New Zealand International Access Code: **00** Country Code: **64**	E-mail (New Zealand): nz_tech_support@dell.com	
	E-mail (Australia): au_tech_support@dell.com	
	Home and Small Business	0800 446 255
	Government and Business	0800 444 617
	Sales	0800 441 567
	Fax	0800 441 566
Nicaragua	General Support	001-800-220-1006
Norway (Lysaker)	Website: **support.euro.dell.com**	

International Access Code: **00** Country Code: **47**	E-mail Support (portable computers): nor_nbk_support@dell.com	
	E-mail Support (desktop computers): nor_support@dell.com	
	E-mail Support (servers): nordic_server_support@dell.com	
	Technical Support	671 16882
	Relational Customer Care	671 17514
	Home/Small Business Customer Care	23162298
	Switchboard	671 16800
	Fax Switchboard	671 16865
Panama	General Support	001-800-507-0962
Peru	General Support	0800-50-669
Poland (Warsaw) International Access Code: **011** Country Code: **48** City Code: **22**	Website: **support.euro.dell.com**	
	E-mail: pl_support@dell.com	
	Customer Service Phone	57 95 700
	Customer Care	57 95 999
	Sales	57 95 999
	Customer Service Fax	57 95 806
	Reception Desk Fax	57 95 998
	Switchboard	57 95 999
Portugal International Access Code: **00** Country Code: **35**	E-mail: **support.euro.dell.com/es/es/emaildell/**	
	Technical Support	800 834 077
	Customer Care	800 300 415 or 800 834 075
	Sales	800 300 410 or 800 300 411 or 800 300 412 or 121 422 07 10
	Fax	121 424 01 12
Puerto Rico	General Support	1-800-805-7545
St. Kitts and Nevis	General Support	toll-free: 1-877-441-4731
St. Lucia	General Support	1-800-882-1521
St. Vincent and the Grenadines	General Support	toll-free: 1-877-270-4609
Singapore (Singapore) International Access Code: **005** Country Code: **65**	Technical Support	toll-free: 800 6011 051
	Customer Service (Penang, Malaysia)	604 633 4949
	Transaction Sales	toll-free: 800 6011 054
	Corporate Sales	toll-free: 800 6011 053
South Africa (Johannesburg) International Access Code: **09/091** Country Code: **27** City Code: **11**	Website: **support.euro.dell.com**	
	E-mail: dell_za_support@dell.com	
	Technical Support	011 709 7710
	Customer Care	011 709 7707
	Sales	011 709 7700
	Fax	011 706 0495
	Switchboard	011 709 7700
Southeast Asian and Pacific Countries	Customer Technical Support, Customer Service, and Sales (Penang, Malaysia)	604 633 4810
Spain (Madrid) International Access Code: **00** Country Code: **34** City Code: **91**	Website: **support.euro.dell.com**	
	E-mail: **support.euro.dell.com/es/es/emaildell/**	
	Home and Small Business	
	Technical Support	902 100 130
	Customer Care	902 118 540
	Sales	902 118 541
	Switchboard	902 118 541
	Fax	902 118 539
	Corporate	
	Technical Support	902 100 130
	Customer Care	902 118 546
	Switchboard	91 722 92 00
	Fax	91 722 95 83

Sweden (Upplands Vasby) International Access Code: **00** Country Code: **46** City Code: **8**	Website: **support.euro.dell.com**	
	E-mail: swe_support@dell.com	
	E-mail Support for Latitude and Inspiron: Swe-nbk_kats@dell.com	
	E-mail Support for OptiPlex: Swe_kats@dell.com	
	E-mail Support for Servers: Nordic_server_support@dell.com	
	Technical Support	08 590 05 199
	Relational Customer Care	08 590 05 642
	Home/Small Business Customer Care	08 587 70 527
	Employee Purchase Program (EPP) Support	20 140 14 44
	Fax Technical Support	08 590 05 594
	Sales	08 590 05 185
Switzerland (Geneva) International Access Code: **00** Country Code: **41** City Code: **22**	Website: **support.euro.dell.com**	
	E-mail: swisstech@dell.com	
	E-mail for French-speaking HSB and Corporate Customers: **support.euro.dell.com/ch/fr/emaildell/**	
	Technical Support (Home and Small Business)	0844 811 411
	Technical Support (Corporate)	0844 822 844
	Customer Care (Home and Small Business)	0848 802 202
	Customer Care (Corporate)	0848 821 721
	Fax	022 799 01 90
	Switchboard	022 799 01 01
Taiwan International Access Code: **002** Country Code: **886**	Technical Support (portable and desktop computers)	toll-free: 00801 86 1011
	Technical Support (servers)	toll-free: 0080 60 1256
	Transaction Sales	toll-free: 0080 651 228 or 0800 33 556
	Corporate Sales	toll-free: 0080 651 227 or 0800 33 555
Thailand International Access Code: **001** Country Code: **66**	Technical Support	toll-free: 0880 060 07
	Customer Service (Penang, Malaysia)	604 633 4949
	Sales	toll-free: 0880 060 09
Trinidad/Tobago	General Support	1-800-805-8035
Turks and Caicos Islands	General Support	toll-free: 1-866-540-3355
U.K. (Bracknell) International Access Code: **00** Country Code: **44** City Code: **1344**	Website: **support.euro.dell.com**	
	Customer Care website: **dell.co.uk/lca/customerservices**	
	E-mail: dell_direct_support@dell.com	
	Technical Support (Corporate/Preferred Accounts/PAD [1000+ employees])	0870 908 0500
	Technical Support (direct/PAD and general)	0870 908 0800
	Global Accounts Customer Care	01344 373 185 or 01344 373 186
	Home and Small Business Customer Care	0870 906 0010
	Corporate Customer Care	0870 908 0500
	Preferred Accounts (500–5000 employees) Customer Care	01344 373 196
	Central Government Customer Care	01344 373 193
	Local Government & Education Customer Care	01344 373 199
	Health Customer Care	01344 373 194
	Home and Small Business Sales	0870 907 4000
	Corporate/Public Sector Sales	01344 860 456
Uruguay	General Support	toll-free: 000-413-598-2521
U.S.A. (Austin, Texas) International Access Code: **011** Country Code: **1**	Automated Order-Status Service	toll-free: 1-800-433-9014
	AutoTech (portable and desktop computers)	toll-free: 1-800-247-9362
	Consumer (Home and Home Office)	
	Technical Support	toll-free: 1-800-624-9896
	Customer Service	toll-free: 1-800-624-9897
	DellNet™ Service and Support	toll-free: 1-877-Dellnet (1-877-335-5638)
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133

	Financial Services website: **www.dellfinancialservices.com**	
	Financial Services (lease/loans)	toll-free: 1-877-577-3355
	Financial Services (Dell Preferred Accounts [DPA])	toll-free: 1-800-283-2210
	Business	
	Customer Service and Technical Support	toll-free: 1-800-822-8965
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-695-8133
	Projectors Technical Support	toll-free: 1-877-459-7298
	Public (government, education, and healthcare)	
	Customer Service and Technical Support	toll-free: 1-800-456-3355
	Employee Purchase Program (EPP) Customers	toll-free: 1-800-234-1490
	Dell Sales	toll-free: 1-800-289-3355 or toll-free: 1-800-879-3355
	Dell Outlet Store (Dell refurbished computers)	toll-free: 1-888-798-7561
	Software and Peripherals Sales	toll-free: 1-800-671-3355
	Spare Parts Sales	toll-free: 1-800-357-3355
	Extended Service and Warranty Sales	toll-free: 1-800-247-4618
	Fax	toll-free: 1-800-727-8320
	Dell Services for the Deaf, Hard-of-Hearing, or Speech-Impaired	toll-free: 1-877-DELLTTY (1-877-335-5889)
U.S. Virgin Islands	General Support	1-877-673-3355
Venezuela	General Support	8001-3605

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Glossary

Dell™ OptiPlex™ SX260 Systems User's Guide

A B C D E F G H I K L M N O P R S T U V W X Z

A

AC — alternating current — The form of electricity that powers your computer when you plug the AC adapter power cable into an electrical outlet.

ACPI — advanced configuration and power interface — A power management specification that enables Microsoft® Windows® operating systems to put a computer in standby or hibernate mode to conserve the amount of electrical power allocated to each device attached to the computer.

AGP — accelerated graphics port — A dedicated graphics port that allows system memory to be used for video-related tasks. AGP delivers a smooth, true-color video image because of the faster interface between the video circuitry and the system memory.

Antivirus software — A program designed to identify, quarantine, and/or delete a virus from your computer.

ASF — alert standards format — A standard to define a mechanism for reporting hardware and software alerts to a management console. ASF is designed to be platform and operating system independent.

B

Backup — A copy of a program or data file on a floppy disk, tape, CD, or hard drive. As a precaution, back up the data files from your hard drive regularly.

BIOS — basic input/output system — A program (or utility) that serves as an interface between the computer hardware and the operating system. Unless you understand what effect the settings have on the computer, do not change the settings for this program. Also referred to as the system setup program.

Bit — The smallest unit of data interpreted by your computer.

Boot sequence — Specifies the order of the devices from which the computer attempts to boot.

Bootable CD — A CD that you can use to start your computer. In case your hard drive is damaged or your computer has a virus, ensure that you always have a bootable CD or bootable disk available. Your ResourceCD is a bootable CD.

Bootable disk — A disk that you can use to start your computer. In case your hard drive is damaged or your computer has a virus, ensure that you always have a bootable disk or bootable CD available.

bps — bits per second — The standard unit for measuring data transmission speed.

BTU — British thermal unit — A measurement of heat output.

Bus — A communication pathway between the components in your computer.

Bus speed — The speed, given in MHz, that indicates how fast a bus can transfer information.

Byte — The basic data unit used by your computer. A byte is usually equal to 8 bits.

C

C — Celsius — A temperature measurement system where 0° is the freezing point and 100° is the boiling point of water.

Cache — An area where data or instructions are stored for quick retrieval. The cache enhances the efficiency of many microprocessor operations.

L1 cache — Fast, primary cache stored inside the microprocessor.

L2 cache — Also called secondary cache; sometimes refers to cache memory external to the microprocessor, although more recent microprocessors incorporate the L2 cache in their architecture.

CD — compact disc — An optical form of storage media, typically used for audio and application programs.

CD drive — A drive that uses optical technology to read data from CDs.

CD player — The software used to play music CDs. The CD player displays a window with buttons you use to play a CD.

CD-R — CD recordable — A recordable version of a CD. Data can be recorded only once onto a CD-R. Once recorded, the data cannot be erased or written over.

CD-RW — CD rewritable — A rewriteable version of a CD. Data can be written to a CD-RW, then erased and written over (rewritten).

CD-RW drive — A drive that can read CDs and write to CD-RW (rewritable CDs) and CD-R (recordable CDs) discs. You can write to CD-RW discs multiple times, but you can write to CD-R discs only once.

Clock speed — The speed, given in MHz, that indicates how fast computer components that are connected to the system bus operate. Components that are synchronized with the clock speed can run faster or slower, but their speed is determined by multiplying or dividing a factor by the clock speed.

cm — centimeter — A metric unit of measure equal to 0.39 inch.

COA — Certificate of Authenticity — The Windows alpha-numeric code located on a sticker on your computer. You may need the COA to complete the operating system setup or reinstallation. Also referred to as the Product Key or Product ID.

Control panel — A Windows utility that allows you to modify operating system and hardware settings, such as display settings.

Controller — A chip that controls the transfer of data between the microprocessor and memory or between the microprocessor and devices.

CRIMM — continuity rambus in-line memory module— A special module without any memory chips that is used to fill unused RIMM slots.

Cursor — The marker on a display or screen that shows where the next keyboard or mouse action will occur. It often is a blinking solid line, an underline character, or a small arrow.

D

DDR SDRAM — double-data-rate SDRAM — A type of SDRAM that doubles the data burst cycle, improving system performance.

Device — Hardware such as a disk drive, printer, or keyboard that is installed in or connected to your computer.

Device driver — See driver.

DIN connector — A round, six-pin connector that conforms to DIN (Deutsche Industrinorm) standards; it is typically used to connect PS/2 keyboard or mouse cable connectors.

Disk striping — A technique for spreading data over multiple disk drives. Disk striping can speed up operations that retrieve data from disk storage. Systems that use disk striping generally allow the user to select the data unit size or stripe width.

DMA — direct memory access — A channel that allows certain types of data transfer between RAM and a device to bypass the microprocessor.

DMTF — Distributed Management Task Force — A consortium of hardware and software companies who develop management standards for distributed desktop, network, enterprise and Internet environments.

DRAM — dynamic random-access memory — Memory that stores information in integrated circuits containing capacitors.

Driver — Software that allows the operating system to control a device such as a printer. Many devices do not work properly if the correct driver is not installed in the computer.

Dual display mode — A display setting that allows you to use a second monitor as an extension of your display. Also referred to as extended display mode.

DVD — digital versatile disc — A disc usually used to store movies. DVDs are double-sided, whereas CDs are single-sided. DVD drives read most CD media as well.

DVD drive — A drive that uses optical technology to read data from DVDs and CDs.

DVD player — The software used to watch DVD movies. The DVD player displays a window with buttons that you use to watch a movie.

DVD-RW drive — A drive that can read DVDs and most CD media and write to DVD-RW (rewritable DVDs) discs.

DVI — digital video interface — A standard for digital transmission between a computer and a digital video display; the DVI adapter works through the computer's integrated graphics.

E

ECC — error checking and correction — A type of memory that includes special circuitry for testing the accuracy of data as it passes in and out of memory.

ECP — extended capabilities port — A parallel connector design that provides improved bidirectional data transmission. Similar to EPP, it uses direct memory access to transfer data and often improves performance.

EDO RAM — extended data output RAM — A type of memory that improves the time to read from memory on faster microprocessors.

EIDE — enhanced integrated device electronics — An improved version of the IDE interface for hard drives and CD drives.

EMI — electromagnetic interference — Electrical interference caused by electromagnetic radiation.

Energy Star — EPA requirements that decrease the overall consumption of electricity.

EPP — enhanced parallel port — A parallel connector design that provides bidirectional data transmission.

ESD — electrostatic discharge — A rapid discharge of static electricity. ESD can damage integrated circuits found in computer and communications equipment.

Expansion card — A circuit board that installs in an expansion slot on the computer's system board, expanding the capabilities of the computer. Examples include video, modem, and sound cards.

Expansion slot — A connector on the computer's system board where you insert an expansion card, connecting it to the system bus.

Express Service Code — A numeric code located on a sticker on your Dell™ computer. Use the Express Service Code when contacting Dell for assistance.

Extended Display Mode — A display setting that allows you to use a second monitor as an extension of your display. Also referred to as dual display mode.

Extended PC Card — A PC card that extends beyond the edge of the PC card slot when installed.

F

F — Fahrenheit — A temperature measurement system where 32° is the freezing point and 212° is the boiling point of water.

FCC — Federal Communications Commission — A U.S. agency responsible for enforcing communications-related regulations that state how much radiation computers and other electronic equipment can emit.

Floppy drive — A disk drive that can read and write to floppy disks.

Folder — A place to organize and group files on a disk or drive. Files in a folder can be viewed and ordered in various ways, such as alphabetically, by date, and by size.

Format — The process that prepares a drive or disk for file storage. When a drive or disk is formatted, the existing information on it is lost.

FSB — front side bus — The data path and physical interface between the microprocessor and RAM.

ft — foot — A unit of measurement for length that equals 12 inches.

FTP — file transfer protocol — A standard Internet protocol used to exchange files between computers connected to the Internet.

G

G — gravity — A measurement of weight and force.

g — gram — A measurement of mass and weight.

GB — gigabyte — For memory, a gigabyte is a unit of data that equals 1024 MB (1,073,741,824 bytes); for storage, a gigabyte equals 16 Mb, or 1 billion bytes.

GHz — gigahertz — A measurement of frequency that equals one thousand million Hz, or one thousand MHz.

Graphics Accelerator — A type of specialized video processor that boosts graphics performance.

Graphics mode — A video mode that can be defined as *x* horizontal pixels by *y* vertical pixels by *z* colors. Graphics modes can display an unlimited variety of shapes and fonts.

GUI — graphical user interface — Software that interacts with the user by means of menus, windows, and icons. Most applications that operate on the Microsoft Windows operating systems are GUIs.

H

Hard drive — A drive that reads and writes data on a hard disk. The terms hard drive and hard disk are often used interchangeably.

Heat sink — A metal plate on some microprocessors that helps dissipate heat.

Hibernate mode — A power management mode that saves everything in memory to a reserved space on the hard drive and then turns off the computer. When you restart the computer, the memory information that was saved to the hard drive is automatically restored.

HTML — hypertext markup language — A set of codes inserted into an Internet web page intended for display on an Internet browser.

HTTP — hypertext transfer protocol — A protocol for exchanging files between computers connected to the Internet.

Hz — hertz — A unit of frequency measurement that equals 1 cycle per second. Computers and electronic devices are often measured in kilohertz (kHz), megahertz (MHz), gigahertz (GHz), or terahertz (THz).

I

IC — Industry Canada — The Canadian regulatory body responsible for regulating emissions from electronic equipment, much as the FCC does in the United States.

IDE — integrated device electronics — An interface for mass storage devices in which the controller is integrated into the hard drive or CD drive.

IEEE 1394 — Institute of Electrical and Electronics Engineers, Inc. — A high-performance serial bus used to connect IEEE 1394-compatible devices, such as digital cameras and DVD players, to the computer. Also called FireWire.

I/O — input/output — An operation or device that enters and extracts data from your computer. Keyboards and printers are I/O devices.

I/O address — An address in RAM that is associated with a specific device (such as a serial connector, parallel connector, or expansion slot) and allows the microprocessor to communicate with that device.

IRQ — interrupt request — An electronic pathway assigned to a specific device so that the device can communicate with the microprocessor. Each device connection must be assigned an IRQ. For example, the first serial connector in your computer is typically assigned to IRQ4. Although two devices can share the same IRQ assignment, you cannot operate both devices simultaneously.

ISP — Internet service provider — A company that allows you to access its host server to connect directly to the Internet. The ISP gives you a software package, user name, and access phone numbers for a monthly fee. If your computer has a modem, you can connect to the Internet, access websites, and send and receive e-mail.

K

Kb — kilobit — A unit of data that equals 1024 bytes. A measurement of the capacity of memory integrated circuits.

KB — kilobyte — A unit of data that equals 1024 bytes but is often referred to as 1,000 bytes.

kg — kilogram — A unit measuring mass that equals 1,000 grams.

kHz — kilohertz — A measurement of frequency that equals 1,000 Hz.

L

LAN — local area network — A computer network covering a small area. A LAN usually is confined to a building or a few nearby buildings. A LAN can be connected to another LAN over any distance via telephone lines and radio waves to form a wide area network (WAN).

LED — light-emitting diode — An electronic component that emits light to indicate the status of the computer.

Local bus — A data bus that provides a fast throughput for devices to the microprocessor.

LPT — Line print terminal — The designation for a parallel connection to a printer or other parallel device. Most computers support one or two parallel connectors: LPT1 and LPT2.

M

Mb — megabit — A measurement of memory chip capacity that equals 1024 KB.

Mbps — megabits per second — One million bits per second. This measurement is typically used for transmission speeds for networks and modems.

MB — megabyte — A measurement of data storage that equals 1,048,576 bytes. 1 MB equals 1024 KB. When used to refer to hard drive storage, the term is often rounded to mean 1,000,000 bytes.

MB/sec — megabytes per second — One million bytes per second. This measurement is typically used for data transfer ratings.

Memory — A temporary data storage area inside your computer. Because the data in memory is not permanent, Dell recommends that you frequently save your files while you are working on them, and always save your files before you shut down the computer. Your computer can contain several different forms of memory, such as RAM, ROM, and video memory. Frequently, the word memory is used as a synonym for RAM.

Memory address — A specific location where data is temporarily stored in RAM.

Memory mapping — The process by which the computer assigns memory addresses to physical locations at start-up. Devices and software can then identify information that the microprocessor can access.

MHz — megahertz — A measure of frequency that equals 1 million cycles per second. The speeds for computer microprocessors, buses, and interfaces are typically measured in MHz.

Microprocessor — A computer chip that interprets and executes program instructions. Sometimes the microprocessor is referred to as the processor or the CPU (central processing unit).

mm — millimeter — A unit of length that equals one thousandth of a meter or 1/25 inch.

Modem — A device that allows your computer to communicate with other computers over analog telephone lines. Three types of modems include: external, PC Card, and internal. You typically use your modem to connect to the Internet and exchange e-mail.

Monitor — The high-resolution TV-like device that displays your computer's output.

Mouse — A pointing device that controls the movement of the cursor on your screen. Typically you roll the mouse along a hard, flat surface to move the pointer or cursor on your screen.

ms — millisecond — A measure of time that equals one thousandth of a second. Access times of storage devices are often measured in ms.

N

Network adapter — A chip that provides network capabilities. A computer may include a network adapter on its system board or it may contain a PC Card with an adapter on it. A network adapter is also referred to as a NIC (network interface controller).

Notification area — The section of the Windows taskbar that contains icons for providing quick access to programs and computer functions, such as the clock, volume control, and print status. Also referred to as system tray.

ns — nanosecond — A measure of time that equals one billionth of a second.

NVRAM — nonvolatile random access memory — A type of memory that stores data when the computer is turned off or loses its external power source. NVRAM

is used for maintaining computer configuration information such as date, time, and other system setup options that you can set.

O

On-Board — Usually refers to components that are physically located or integrated on the computer's system board.

P

Parallel connector — An I/O port often used to connect a parallel printer to your computer. Also referred to as an LPT port.

Partition — A physical storage area on a hard drive that is assigned to one or more logical storage areas known as logical drives. Each partition can contain multiple logical drives.

PCI — peripheral component interconnect — PCI is a local bus that supports 32- and 64-bit data paths, providing a high-speed data path between the microprocessor and devices such as video, drives, and networks.

PIO — programmed input/output — A method of transferring data between two devices through the microprocessor as part of the data path.

Pixel — A single point on a display screen arranged in rows and columns to create an image. A video resolution, such as 800 x 600, is expressed as the number of pixels across by the number of pixels up and down.

Plug-and-Play — The ability of the computer to automatically configure devices. Plug and Play provides automatic installation, configuration, and compatibility with existing hardware if the BIOS, operating system, and all devices are Plug and Play compliant.

POST — power-on self-test — Diagnostics programs, loaded automatically by the BIOS, that perform basic tests on the major computer components, such as memory, hard drives, and video. If no problems are detected during POST, the computer continues the start-up.

Program — Any software that processes data for you, including spreadsheet, word processor, database, and game packages. Programs require an operating system to run.

PS/2 — personal system/2 — A type of connector for attaching a PS/2-compatible keyboard, mouse, or keypad.

PXE — pre-boot execution environment — A WfM (Wired for Management) standard that allows networked computers that do not have an operating system to be configured and started remotely.

R

RAID — redundant array of independent disks — A system of two or more drives working together for performance and fault tolerance. RAID drives are typically used on servers and high-end PCs.

RAM — random-access memory — The primary temporary storage area for program instructions and data. Any information stored in RAM is lost when you turn off your computer.

Readme file — A text file included with a software package or hardware product. Typically, readme files provide installation information and describe new product enhancements or corrections that have not yet been documented.

Read-Only — Data and/or files you can view but cannot edit or delete. A file can have read-only status if:

- It resides on a physically write-protected floppy disk.
- It is located on a network in a directory and the system administrator has assigned rights only to specific individuals.

Refresh rate — The frequency, measured in Hz, at which your screen's horizontal lines are recharged (sometimes also referred to as its vertical frequency). The higher the refresh rate, the less video flicker can be seen by the human eye.

Resolution — The sharpness and clarity of an image produced by a printer or displayed on a monitor. The higher the resolution, the sharper the image.

RFI — radio frequency interference — Interference that is generated at typical radio frequencies, in the range of 10 kHz to 100,000 MHz. Radio frequencies are at the lower end of the electromagnetic frequency spectrum and are more likely to have interference than the higher frequency radiations such as infrared and light.

ROM — read-only memory — Memory that stores data and programs that cannot be deleted or written to by the computer. ROM, unlike RAM, retains its contents after you turn off your computer. Some programs essential to the operation of your computer reside in ROM.

RPM — revolutions per minute — The number of rotations that occur per minute.

RTC — real time clock — Battery-powered clock on the system board that keeps the date and time after you turn off the computer.

RTCRST — real time clock reset — A jumper on the system board that can often be used for troubleshooting problems.

S

ScanDisk — A Microsoft utility that checks files, folders, and the hard drive's surface for errors. ScanDisk often runs after a lockup occurs.

SDRAM — synchronous dynamic random-access memory — A type of DRAM that is synchronized with the optimal clock speed of the microprocessor.

Serial connector — An I/O port often used to connect devices such as a handheld digital device or digital camera to your computer.

Service tag — A bar code label on your computer that identifies your computer when you access Dell | Support at **support.dell.com** or when you call Dell for customer or technical support.

Setup program — A program that is used to install and configure hardware and software. The **setup.exe** or **install.exe** program comes with most Windows software packages. Setup program differs from system setup program.

Shortcut — An icon that provides quick access to frequently used programs, files, folders, and drives. When you place a shortcut on your Windows desktop and double-click the icon, you can open its corresponding folder or file without having to find it first. Shortcut icons do not change the location of files. If you delete a shortcut, the original file is not affected. Also, you can rename a shortcut icon.

Shutdown — The process of closing windows and programs, exiting the operating system, and turning off your computer. You can lose data if you turn off your computer before completing a shutdown.

Software — Anything that can be stored electronically, such as computer files or programs.

Standby mode — A power management mode that shuts down all unnecessary computer operations to save energy.

Surge protectors — Prevents voltage spikes, such as those that may occur during an electrical storm, from entering the system through the electrical outlet. They do not protect against lightning strikes or against brownouts, which occur when the voltage drops more than 20 percent below the normal AC line voltage level.

Network connections cannot be protected by surge protectors. Always disconnect the network cable from the network connector during electrical storms.

System board — The main circuit board in your computer. Also known as the motherboard.

System setup program — A utility that serves as an interface between the computer hardware and the operating system. System setup allows you to configure user-selectable options in the BIOS such as date and time or system password. Unless you understand what effect the settings have on the computer, do not change the settings for this program.

T

TAPI — telephony application programming interface — Enables Microsoft Windows program applications to operate with a wide variety of telephony devices, including voice, data, fax, video, and so on.

Text editor — A program used to create and edit files that contain only text; for example, Windows Notepad uses a text editor. Text editors do not usually provide word wrap or formatting functionality (the option to underline, change fonts, and so on).

U

UPS — uninterruptible power supply — A backup power source used when the electrical power fails or drops to an unacceptable voltage level. A UPS keeps a computer running for a limited amount of time when there is no electrical power. UPS systems typically provide surge suppression and may also provide voltage regulation. Small UPS systems provide battery power for a few minutes to enable you to shut down your computer.

USB — universal serial bus — A hardware interface for a low-speed device such as a USB-compatible keyboard, mouse, joystick, scanner, set of speakers, or printer. Devices are plugged directly into a 4-pin socket on your computer or into a multi-port hub that plugs into your computer. USB devices can be connected and disconnected while the computer is turned on, and they can also be daisy-chained together.

V

Video controller — The circuitry on a video card or on the system board (in computers with an integrated video controller) that provides the video capabilities—in combination with the monitor—for your computer.

Video memory — Memory that consists of memory chips dedicated to video functions. Video memory is usually faster than system memory. The amount of video memory installed primarily influences the number of colors that a program can display.

Video mode — A mode that describes how text and graphics are displayed on a monitor. Graphics-based software, such as the Windows operating system, displays in video modes that can be defined as *x* horizontal pixels by *y* vertical pixels by *z* colors. Character-based software, such as text editors, displays in video modes that can be defined as *x* columns by *y* rows of characters.

Video resolution — See resolution.

Virus — A program that is designed to inconvenience you or to destroy data stored on your computer. A virus program moves from one computer to another via an infected disk, software downloaded from the Internet, or e-mail attachments. When an infected program starts, its embedded virus also starts.

A virus cannot be attached to data. It must be attached to a program that is downloaded into or installed on the computer. Macro viruses, although hidden within documents (data), are similar. It is in the execution of the macro that the damage is done.

A common type of virus is a boot virus, which is stored in the boot sectors of a floppy disk. If the floppy disk is left in the drive when the computer is shut down and then turned on, the computer is infected when it reads the boot sectors of the floppy disk expecting to find the operating system. If the computer is infected, the boot virus may replicate itself onto all of the floppy disks that are read or written in that computer until the virus is eradicated.

V — volt — The measurement of electric potential or electromotive force. One V appears across a resistance of 1 ohm when a current of 1 ampere flows through that resistance.

W

W — watt — The measurement of electrical power. One W is 1 ampere of current flowing at 1 volt.

WHr — watt-hour — A unit of measure commonly used to indicate the approximate capacity of a battery. For example, a 66 WHr battery can supply 66 W of power for 1 hour or 33 W for 2 hours.

Wallpaper — The background pattern or picture on the Windows desktop. Change your wallpaper through the Windows Control Panel. You can also scan in your favorite picture and make it wallpaper.

Write-Protected — Files or media that cannot be changed. Use write-protection when you want to protect data from being changed or destroyed. To write-protect a 3.5-inch floppy disk, slide its write-protect tab to the open position.

X

Z

ZIF — zero insertion force — A type of socket or connector that allows a computer chip to be installed or removed with no stress applied to either the chip or its socket.

Zip — A popular data compression format. Files that have been compressed with the Zip format are called Zip files and usually have a filename extension of **.zip**. A special kind of zipped file is a self-extracting file, which has a filename extension of **.exe**. You can unzip a self-extracting file by double-clicking it.

Zip drive — A high-capacity floppy drive developed by Iomega Corporation that uses 3.5-inch removable disks called Zip disks. Zip disks are slightly larger than regular floppy disks, about twice as thick, and they hold up to 100 MB of data.

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Hard Drive

Dell™ OptiPlex™ SX260 Systems User's Guide

CAUTION: Before you begin this procedure, follow the steps in "CAUTION: Safety Instructions."

CAUTION: To guard against electrical shock, always unplug your computer from the power supply before removing the hard drive.

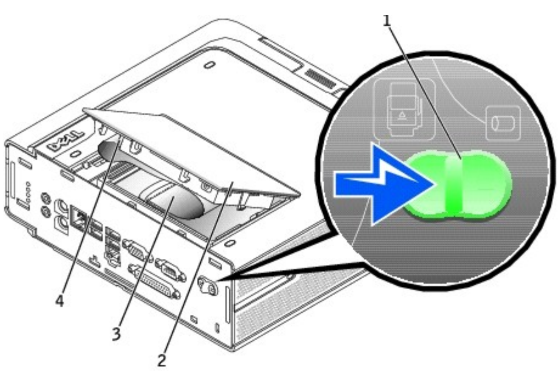
CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

NOTICE: To avoid damage to the drive, do not set it on a hard surface. Instead, set the drive on a surface, such as a foam pad, that will sufficiently cushion it.

1. If you are replacing a hard drive that contains data you want to keep, back up your files before you begin this procedure.
2. Check the documentation for the drive to verify that it is configured for your computer.
3. Perform an orderly computer shutdown using the operating system menu.
4. Turn off your computer and any attached devices.

NOTICE: To disconnect a network cable, first unplug the cable from your computer, and then unplug it from the network wall jack.

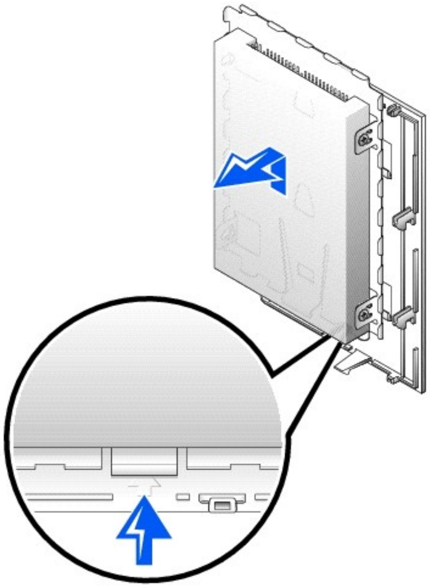
5. Disconnect your computer from the power adapter and devices from their power sources. Also, disconnect any telephone or telecommunication lines from the computer.
6. Press the power button to ground the system board.
7. Remove the computer from the mounting plate (if used).
8. Remove the cable cover, if it is attached.
9. Slide the release button as shown in the illustration.



1	release button
2	hard-drive door
3	drive cable
4	drive connector

NOTICE: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

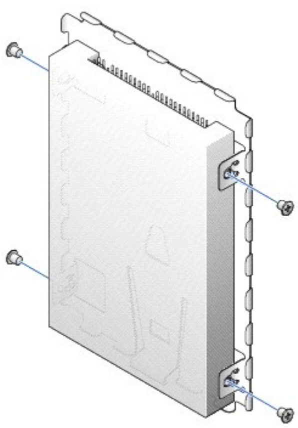
10. Rotate the hard-drive door up and remove the drive cable from the drive connector.
11. Raise the release tab, and slide the drive up and away from the plastic door.



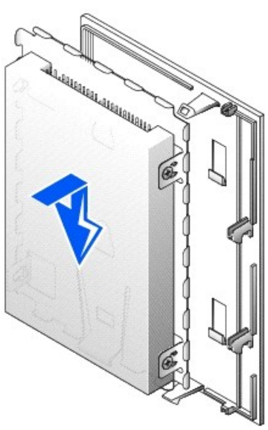
12. If your replacement drive is not attached to a metal sled:

    a. While holding the drive that you are replacing, remove the screws that hold the drive to the sled.

    b. Attach the replacement drive to the sled and replace the screws as shown in the illustration.

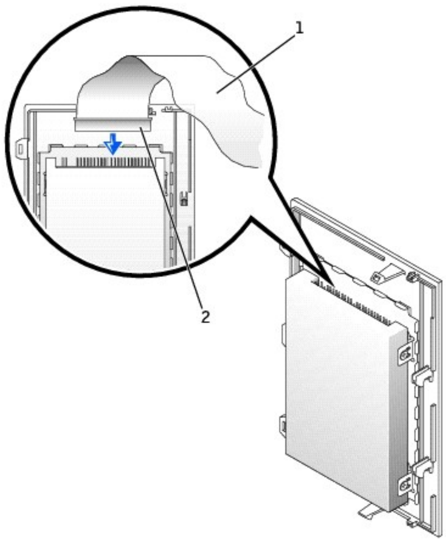


13. Slide the new drive onto the plastic door.



NOTICE: There are four extra pins on the hard drive that are not on the cable connector. Use care when attaching the cable so that the drive pins are not bent or broken.

14. Attach the drive cable to the connector on the new drive, being careful not to bend any of the pins.



1	drive cable
2	drive connector

15. Slide the drive into the drive bay and lower the hard-drive door to lock into place.
16. Replace the cable cover (if used).
17. Attach the computer to the mounting plate (if used).

NOTICE: To connect a network cable, first plug the cable into the network wall jack, and then plug it into the computer.

18. Connect your computer to the power adapter and devices to their electrical outlets, and turn them on.

    See the documentation that came with the drive for instructions on installing any software required for drive operation.

19. Reboot the computer.
20. Partition and logically format your drive before you proceed to the next step.

    For instructions, see the documentation that came with your operating system.

21. Test the hard drive by running the Dell Diagnostics.
22. Install your operating system on the hard drive.

    For instructions, see the documentation that came with your operating system.

    After you replace the cover, the chassis intrusion detector, if enabled, causes the following message to appear on the screen at the next computer start-up:

```
ALERT! Cover was previously removed.
```

23. Reset the chassis intrusion detector by changing **Chassis Intrusion** to **Enabled** or **Enabled-Silent**.

NOTE: If a setup password has been assigned by someone else, contact your network administrator for information on resetting the chassis intrusion detector.

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Memory

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CAUTION: Before you begin this procedure, follow the steps in "CAUTION: Safety Instructions."

CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the cover.

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

You can increase your computer memory by installing memory modules on the system board. For information on the type of memory supported by your computer, see the "Memory" section in "Technical Specifications."

1. Shut down the computer through the **Start** menu.
2. Ensure that your computer and attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your computer, turn them off now.

NOTICE: To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.

3. Disconnect any telephone or telecommunication lines from the computer.
4. Disconnect your computer and all attached devices from their electrical outlets, and then press the power button to ground the system board.
5. Remove the stand, if it is attached.
6. Remove the cable cover, if it is attached.

CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before removing the cover.

7. Remove the computer cover.

NOTICE: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

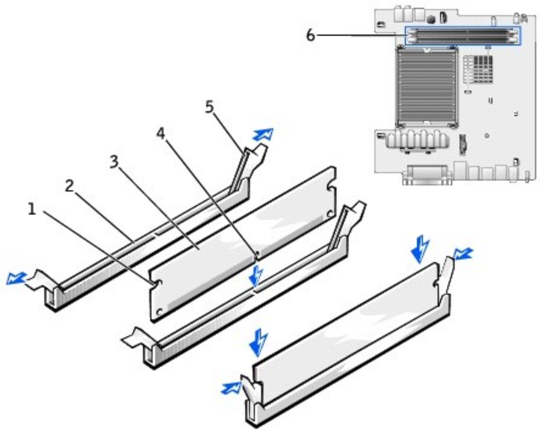
Removing a Memory Module

1. Press out the securing clip at each end of the memory module connector.
2. Grasp the module and pull up.

   If the module is difficult to remove, gently ease the module back and forth to remove it from the connector.

Adding a Memory Module

1. Press out the securing clip at each end of the memory module connector.



1	cutouts (2)
2	connector
3	memory module
4	notch
5	securing clips (2)
6	memory connectors on system board

2. Align the notch on the bottom of the module with the crossbar in the connector.

NOTICE: To avoid damage to the memory module, press the module straight down into the socket with equal force applied at each end of the module.

3. Insert the module straight down into the connector, ensuring that it fits into the vertical guides at each end of the connector. Press firmly on the ends of the module until it snaps into place.

   If you insert the module correctly, the securing clips snap into the cutouts at each end of the module.

4. Replace the computer cover.
5. Reattach the stand (if used).
6. Attach the computer to the mounting plate (if used).
7. Replace the cable cover (if used).

NOTICE: To connect a network cable, first plug the cable into the network wall jack, and then plug it into the computer.

8. Connect your computer to the adapter cable and devices to electrical outlets, and turn them on.

   After you replace the cover, the chassis intrusion detector, if enabled, causes the following message to appear on the screen at the next computer start-up:

```
ALERT! Cover was previously removed.
```

9. Reset the chassis intrusion detector by changing the **Chassis Intrusion** option to **Enabled** or **Enabled-Silent**.

   NOTE: If a setup password has been assigned by someone else, contact your network administrator for information on resetting the chassis intrusion detector.

   The computer detects that the new memory does not match the existing configuration information and generates the following message:

```
The amount of system memory has changed.
Strike the F1 key to continue, F2 to run the setup utility.
```

10. Press <F2> to enter system setup and check the value for **System Memory**.

The computer should have changed the value of **System Memory** to reflect the newly installed memory. Verify the new total. If it is correct, skip to step 12.

11. If the memory total is incorrect, turn off and disconnect your computer from the power adapter and devices from their electrical outlets. Remove the computer cover and check the installed memory modules to ensure that they are seated properly in their sockets. Then repeat steps 4 through 9.

12. When the **System Memory** total is correct, press <Esc> to exit system setup.

13. Run the Dell Diagnostics to verify that the memory modules are operating properly.

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Adding and Removing Parts

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Microprocessor

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CAUTION: Before you begin this procedure, follow the steps in "CAUTION: Safety Instructions."

CAUTION: To prevent static damage to components inside your computer, discharge static electricity from your body before you touch any of your computer's electronic components. You can do so by touching an unpainted metal surface on the computer chassis.

1. Shut down the computer through the Start menu.
2. Ensure that your computer and attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your computer, turn them off now.

NOTICE: To disconnect a network cable, first unplug the cable from your computer and then unplug it from the network wall jack.

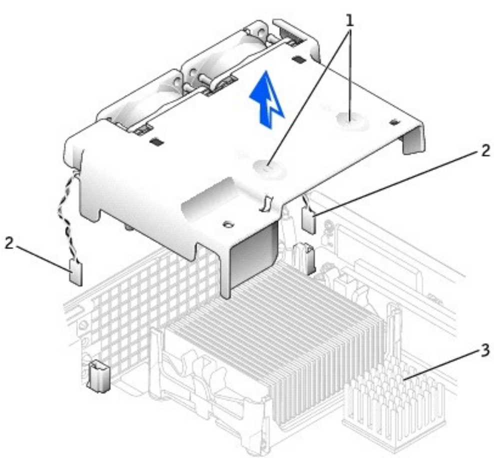
3. Disconnect any telephone or telecommunication lines from the computer.
4. Disconnect your computer and all attached devices from their electrical outlets, and then press the power button to ground the system board.
5. Remove the computer from the mounting plate (if used).
6. Remove the cable cover, if it is attached.
7. Remove the stand, if it is attached.

CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before removing the cover.

8. Remove the computer cover.

NOTICE: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate any static electricity that could harm internal components.

9. Disconnect the two fan power cables from the FAN1 and FAN2 connectors on the system board.
10. Remove the fan shroud by pressing on the thumb indentations and sliding the shroud forward, detaching the shroud from the four tabs (see illustration). Lift the fan shroud up and away from the computer.

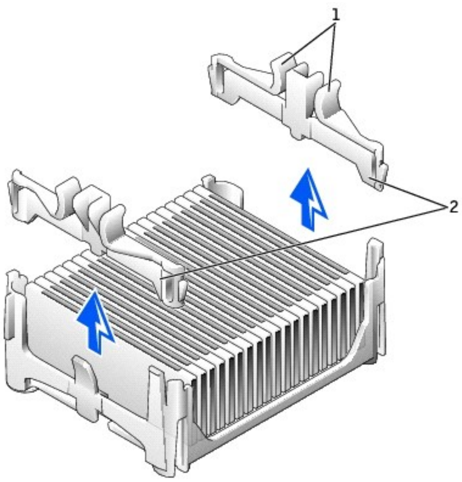


1	thumb indentations
2	fan power cables (2)
3	chip set heatsink (do not remove)

CAUTION: The heat sink can get extremely hot. Be sure the heat sink has had sufficient time to cool before you touch it.

11. Remove the heat sink.

   a. Remove the two securing brackets, if present, by pressing the tabs together and lifting the brackets up.

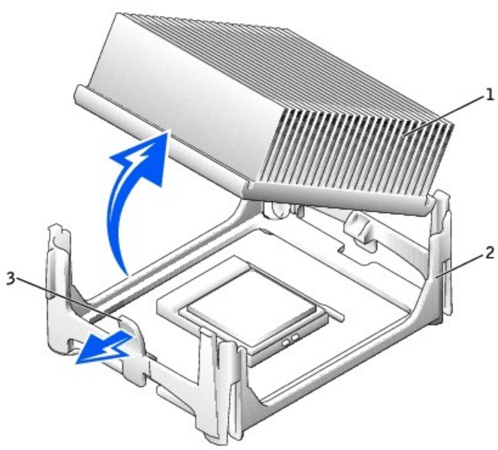


1	tabs (2 on each securing bracket)
2	securing brackets (2)

NOTE: Your computer may or may not have securing brackets. Operating the computer without these brackets does not affect its performance.

   b. Remove the memory module (see "Removing a Memory Module") closest to the heat sink.

   c. Press the lever on the retention base until the heat sink is released.



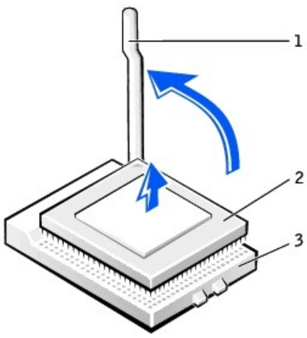
1	heat sink
2	retention base
3	lever

   d. Gently lift the heat sink from the microprocessor.

NOTICE: Lay the heat sink down with the thermal material facing upward.

NOTICE: Be careful not to bend any of the pins when you remove the microprocessor. Bending the pins can permanently damage the microprocessor.

12. Pull the release lever straight up until the microprocessor is released, and then remove the microprocessor from the socket.



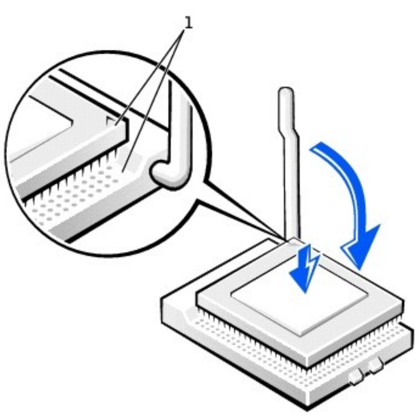
1	release lever
2	microprocessor
3	socket

NOTICE: Ground yourself by touching an unpainted metal surface on the back of the computer.

NOTICE: Be careful not to bend any of the pins when you unpack the microprocessor. Bending the pins can permanently damage the microprocessor.

13. Unpack the new microprocessor.

If any of the pins on the microprocessor appear to be bent, contact Dell (see "Getting Help") for instructions on obtaining technical assistance.



1	pin-1 corners of microprocessor and socket aligned

NOTICE: You must position the microprocessor correctly in the socket to avoid permanent damage to the microprocessor and the computer when you turn on the computer.

14. If the release lever on the socket is not fully extended, move it to that position.

15. Align the pin-1 corners of the microprocessor and socket.

NOTICE: When you place the microprocessor in the socket, ensure that all of the pins fit into the corresponding holes on the socket. Be careful not to bend the pins.

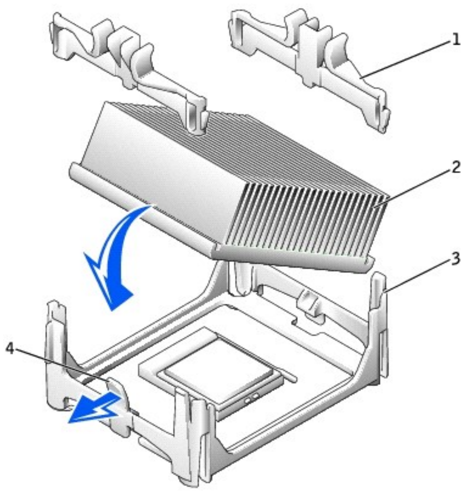
16. Set the microprocessor lightly in the socket and ensure that all pins are headed into the correct holes. Do not use force, which could bend the pins if the microprocessor is misaligned. When the microprocessor is positioned correctly, press it with minimal pressure to seat it.

17. When the microprocessor is fully seated in the socket, pivot the release lever back toward the socket until it snaps into place to secure the microprocessor.

NOTICE: Ground yourself by touching an unpainted metal surface on the back of the computer.

If you are installing a microprocessor replacement kit from Dell, return the microprocessor to Dell in the same package in which your replacement kit was sent.

18. Place one end of the heat sink under the tab on the retention base on the side opposite the lever (see the illustration). Lower the heat sink onto the microprocessor so that the heat sink fits securely under the tab on the other end of the retention base.



1	securing brackets (2)
2	heat sink
3	retention base
4	lever

19. If you removed securing brackets in step a, replace the securing brackets that you removed.

20. Plug the two fan cables into the FAN1 and FAN2 connectors on the system board.

21. Replace the computer cover.

22. Reattach the stand (if used).

23. Attach the computer to the mounting plate (if used).

24. Replace the cable cover (if used).

NOTICE: To connect a network cable, first plug the cable into the network wall jack, and then plug it into the computer.

25. Connect your computer to the adapter cable and devices to electrical outlets, and turn them on.

After you replace the cover, the chassis intrusion detector, if enabled, causes the following message to appear on the screen at the next computer start-up:

```
ALERT! Cover was previously removed.
```

26. Reset the chassis intrusion detector by changing the **Chassis Intrusion** option to **Enabled** or **Enabled-Silent**.

NOTE: If a setup password has been assigned by someone else, contact your network administrator for information on resetting the chassis intrusion detector.

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CAUTION: Safety Instructions

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Use the following safety guidelines to help ensure your own personal safety and to help protect your computer and working environment from potential damage.

General

- Do not attempt to service the computer yourself unless you are a trained service technician. Always follow installation instructions closely.
- To help prevent electric shock, plug the computer and device power cables into properly grounded electrical outlets. These cables are equipped with 3-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.



- To help avoid the potential hazard of electric shock, do not use your computer during an electrical storm.
- To help avoid the potential hazard of electric shock, do not connect or disconnect any cables or perform maintenance or reconfiguration of this product during an electrical storm.
- If your computer includes a modem, the cable used with the modem should be manufactured with a minimum wire size of 26 American wire gauge (AWG) and an FCC-compliant RJ-11 modular plug.
- Before you clean your computer, disconnect the computer from the electrical outlet. Clean your computer with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may contain flammable substances.
- To help avoid possible damage to the system board, wait 5 seconds after turning off the computer before disconnecting a device from the computer.
- To avoid shorting out your computer when disconnecting a network cable, first unplug the cable from the network adapter on the back of your computer, and then from the network jack. When reconnecting a network cable to your computer, first plug the cable into the network jack, and then into the network adapter.
- To help protect your computer from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Ensure that nothing rests on your computer's cables and that the cables are not located where they can be stepped on or tripped over.
- Do not push any objects into the openings of your computer. Doing so can cause fire or electric shock by shorting out interior components.
- Keep your computer away from radiators and heat sources. Also, do not block cooling vents. Avoid placing loose papers underneath your computer; do not place your computer in a closed-in wall unit or on a bed, sofa, or rug.

When Working Inside Your Computer

Before you open the computer cover, perform the following steps in the sequence indicated.

CAUTION: Do not attempt to service the computer yourself, except as explained in your online Dell™ documentation or in instructions otherwise provided to you by Dell. Always follow installation and service instructions closely.

NOTICE: To help avoid possible damage to the system board, wait 5 seconds after turning off the computer before removing a component from the system board or disconnecting a device from the computer.

1. Perform an orderly computer shutdown using the operating system menu.
2. Turn off your computer and any devices connected to the computer.
3. Ground yourself by touching an unpainted metal surface on the chassis before touching anything inside your computer.

   While you work, periodically touch an unpainted metal surface on the computer chassis to dissipate any static electricity that might harm internal components.

4. Disconnect your computer and devices, including the monitor, from their electrical outlets. Also, disconnect any telephone or telecommunication lines from the computer.

Doing so reduces the potential for personal injury or shock.

In addition, take note of these safety guidelines when appropriate:

- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.
- Handle components with care. Hold a component such as a microprocessor chip by its edges, not by its pins.

CAUTION: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Do not dispose of the battery along with household waste. Contact your local waste disposal agency for the address of the nearest battery deposit site.

Protecting Against Electrostatic Discharge

Static electricity can harm delicate components inside your computer. To prevent static damage, discharge static electricity from your body before you touch any of your computer's electronic components, such as the microprocessor. You can do so by touching an unpainted metal surface on the computer chassis.

As you continue to work inside the computer, periodically touch an unpainted metal surface to remove any static charge your body may have accumulated.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- Do not remove components from their antistatic packing material until you are ready to install the component in your computer. Just before unwrapping the antistatic packaging, discharge static electricity from your body.
- When transporting an electrostatic sensitive component, first place it in an antistatic container or packaging.
- Handle all electrostatic sensitive components in a static-safe area. If possible, use antistatic floor pads and workbench pads.

Ergonomic Computing Habits

CAUTION: Improper or prolonged keyboard use may result in injury.

CAUTION: Viewing the monitor screen for extended periods of time may result in eye strain.

For comfort and efficiency, observe the ergonomic guidelines in "Ergonomic Computing Habits" when setting up and using your computer.

Battery Disposal

Your computer uses a lithium coin-cell battery. The lithium coin-cell battery is a long-life battery, and it is very possible that you will never need to replace it. However, should you need to replace it, see "Battery."

Do not dispose of the battery along with household waste. Contact your local waste disposal agency for the address of the nearest battery deposit site.

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Solving Problems

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System Lights

Located on the front of the computer, these lights can indicate a computer problem.

Power Light	Problem Description	Suggested Resolution
Solid green	Power is on, and the computer is operating normally.	Normal operating condition. Otherwise, check the back panel diagnostic lights to see if the specific problem is identified. See "Diagnostic Lights."
Blinking green	The computer is in the suspended state (Microsoft® Windows® 2000 and Windows XP).	Press the power button, move the mouse, or press a key on the keyboard to wake the computer.
Solid yellow	A device on the system board may be faulty or incorrectly installed.	See "Power Problems." If the problem persists, contact Dell for technical assistance.
Blinking yellow	A power supply or system board failure may have occurred.	See "Power Problems." If the problem persists, contact Dell for technical assistance.
Solid green and a beep code during POST	A problem was detected while the BIOS was executing.	See "Beep Codes" for instructions on diagnosing the beep code. Also, check the diagnostic lights to see if the specific problem is identified.
Solid green power light and no beep code and no video during POST	The monitor or the graphics card may be faulty or incorrectly installed.	Check the diagnostic lights to see if the specific problem is identified. See "Video and Monitor Problems."
Solid green power light and no beep code, but the computer locks up during POST	An integrated system board device may be faulty.	Check the diagnostic lights to see if the specific problem is identified. If the problem is not identified, contact Dell for technical assistance.

Battery Problems

Fill out the Diagnostics Checklist as you complete these checks.

CAUTION: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

CAUTION: Before you begin any of the procedures in this section, follow the instructions "CAUTION: Safety Instructions."

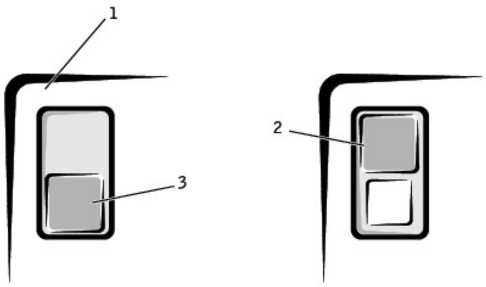
Replace the battery — If you have to repeatedly reset time and date information after turning on the computer, or if an incorrect time or date displays during start-up, replace the battery (see "Battery"). If the battery still does not work properly, contact Dell.

Drive Problems

Fill out the Diagnostics Checklist as you complete these checks.

Floppy drive problems

Test the drive — • Insert another disk to eliminate the possibility that the original floppy disk is defective. • Insert a bootable floppy disk and reboot the computer.
Ensure that the disk is not full or write-protected — Ensure that the disk has available space and that it is not write-protected (locked). See the following illustration.



1	back of floppy disk
2	write-protected
3	not write-protected

Run the Dell Diagnostics — Run the **Diskette Device Group** test. If any of the tests fail, contact Dell.

NOTICE: Do not attempt to clean drive heads with a swab. You may accidentally misalign the heads, which can render the drive inoperable**.**

Clean the drive — Use a commercially available cleaning kit.

CD drive problems

Adjust the Windows volume control — Click the speaker icon in the lower-right corner of your screen. • Ensure that the volume is turned up by clicking the slidebar and dragging it up. • Ensure that the sound is not muted by clicking any boxes that are checked.
Test the drive with another CD — Insert another CD to eliminate the possibility that the original CD is defective.
Ensure that Windows recognizes the drive — Click the **Start** button and click **My Computer**. If the CD drive is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.
Clean the disc — Use a commercially available cleaning kit.

Problems writing to a CD-RW drive

Close other programs — The CD-RW drive must receive a steady stream of data when writing. If the stream is interrupted, an error occurs. Try closing all programs before writing to the CD-RW.

DVD drive problems

NOTE: Because of different worldwide file types, not all DVD titles work in all DVD drives.

Test the drive with another DVD — Insert another DVD to eliminate the possibility that the original DVD is defective.

Ensure that Windows recognizes the drive — Click the **Start** button and click **My Computer**. If the DVD drive is not listed, perform a full scan with your antivirus software to check for and remove viruses. Viruses can sometimes prevent Windows from recognizing the drive.

Clean the disc — Use a commercially available cleaning kit.

Check for interrupt request conflicts — See "Resolving Software and Hardware Incompatibilities."

Hard drive problems

Test the hard drive —

Windows® XP — Run the chkdsk utility:

1. Click the **Start** button, select **Shutdown**, and click **Restart the Computer**.
2. At the C: prompt, type `CD\Windows\Command` and press <Enter>.
3. Type chkdsk and press <Enter>.

   The utility creates and displays a status report and lists and corrects errors on the disk.

Windows 2000 — Run the ScanDisk utility:

Click the Start button, point to Run, type scandskw, and click OK.

Windows NT® — Run the error-checking utility:

1. Click the **Start** button, click **My Computer**, and select the hard drive that you want to check.
2. Click the right mouse button, click **Properties**, click **Tools**, and then click **Check Now** in the **Error-checking** section.

MS-DOS®

Type scandisk *x*: at an MS-DOS prompt, where *x* is the hard drive letter, and then press <Enter>.

Run the Dell Diagnostics — Run the **IDE Devices** device group. If the tests indicate a faulty drive or drive controller, contact Dell.

Check the cable connections —

Verify that the interface cable is firmly connected to the drive and to the system board.

If the hard drive activity light does not blink during the boot routine, contact Dell.

If the primary hard drive that contains the operating system does not boot, files in the operating system might be corrupt. For more information, see your operating system documentation.

Run the Hard-Drive Diagnostics Utility — The Dell IDE Hard-Drive Diagnostics is a utility that tests the hard drive to troubleshoot or confirm a hard-drive failure.

1. Turn on your computer (if your computer is already on, restart it).
2. When `F2 = Setup` appears in the upper-right corner of the screen, press <Ctrl><Alt><D>.
3. Follow the instructions on the screen.

Repairing a Wet Computer

Spills, splashes, and excessive humidity can cause damage to the computer. If an external device, such as a printer, gets wet, contact the manufacturer of the device for instructions.

CAUTION: Before you perform this procedure, see "CAUTION: Safety Instructions."

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then remove the computer cover.

2. Let the computer dry for at least 24 hours. Make sure that it is thoroughly dry before you proceed.
3. Replace the computer cover, reconnect the computer and devices to their electrical outlets, and turn them on. If the computer has power, proceed to the next step. If the computer does not have power, contact Dell.
4. Run the **System Board Devices** test group in the Dell Diagnostics. If any of the diagnostics tests fail, contact Dell.

Dropped or Damaged Computer

CAUTION: Before you begin any of the procedures in this section, follow the instructions in "CAUTION: Safety Instructions."

Check the memory and cable connections —

1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and then remove the computer cover.
2. Check the memory module connections in the computer, and reseat any loose modules.
3. Ensure that all cables are properly connected and that all components are properly seated in their connectors and sockets.
4. Replace the computer cover, reconnect the computer and devices to electrical outlets, and turn them on.
5. Run the **System Board Devices** test group in the Dell Diagnostics.

   If any of the diagnostics tests fail, contact Dell.

Error Messages

If the message is not listed, see the documentation for the operating system or the program that was running when the message appeared.

A filename cannot contain any of the following characters: \ / : * ? " < > | — Do not use these characters in filenames.

A required .DLL file was not found — The program that you are trying to open is missing an essential file. To remove and then reinstall the program:

1. Click the **Start** button.
2. Click **Control Panel**.
3. Click **Add or Remove Programs**.
4. Select the program you want to remove.
5. Click the **Change or Remove Program** icon.
6. See the program documentation for installation instructions.

Alert! Previous attempts at booting this system have failed at checkpoint [*nnnn*]. For help in resolving this problem, please note this checkpoint and contact Dell Technical Support — The computer failed to complete the boot routine three consecutive times for the same error. Contact Dell and report the checkpoint code (nnnn) to the support technician.

Attachment failed to respond — The floppy or hard drive controller cannot send data to the associated drive. See "Floppy drive problems" or "Hard drive problems" for troubleshooting suggestions.

Bad command or file name — Ensure that you have spelled the command correctly, have put spaces in the proper place, and have used the correct pathname.

Bad error-correction code (ECC) on disk read — The floppy or hard drive controller detected an uncorrectable read error. See "Floppy drive problems" or "Hard drive problems" for troubleshooting suggestions.

Controller has failed — The hard drive or the associated controller is defective. See "Floppy drive problems" or "Hard drive problems" for troubleshooting suggestions.

Data error — The floppy or hard drive cannot read the data.

- For the Microsoft® Windows® operating system, run the chkdsk utility to check the file structure of the floppy or hard drive.
- For another operating system, run the appropriate corresponding utility.

See your operating system documentation for information on running these utilities.

Decreasing available memory — One or more memory modules might be faulty or improperly seated.

- Reinstall the memory modules (see "Memory") and, if necessary, replace them.
- See "Memory Problems" for additional troubleshooting suggestions.

Diskette drive 0 seek failure — A cable might be loose or the computer configuration information may not match the hardware configuration. See "Floppy drive problems" for troubleshooting suggestions.

Diskette read failure — The floppy disk may be defective or a cable might be loose.

- If the drive access light turns on, try a different disk.
- See "Floppy drive problems" for troubleshooting suggestions.

Diskette subsystem reset failed — The floppy drive controller might be faulty. Run the Diskette tests in the Dell Diagnostics.

Diskette write protected — The floppy disk is write-protected. Slide the write-protect notch to the open position.

Drive not ready — No floppy disk is in the drive. Put a floppy disk in the drive.
Gate A20 failure — One or more memory modules might be faulty or improperly seated. - Reinstall the memory modules (see "Memory") and, if necessary, replace them. - See "Memory Problems" for additional troubleshooting suggestions.
General failure — The operating system is unable to carry out the command. This message is usually followed by specific information—for example, `Printer out of paper`. Take the appropriate action to resolve the problem.
Hard-disk configuration error — **Hard-disk controller failure —** **Hard-disk drive failure —** The hard drive failed initialization. - Run the Hard-Disk Drive tests in the Dell Diagnostics. - See "Hard drive problems" for troubleshooting suggestions.
Insert bootable media — The operating system is trying to boot to a nonbootable floppy disk or CD. Insert a bootable floppy disk or CD.
Invalid configuration information - please run SETUP program — The computer configuration information does not match the hardware configuration. Enter system setup and correct the computer configuration information.
Keyboard failure — A cable or connector might be loose, or the keyboard or keyboard/mouse controller might be faulty. See "Keyboard Problems."
Memory address line failure at *address*, read *value* expecting *value* — A memory module might be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them. See "Memory Problems" for additional troubleshooting suggestions.
Memory allocation error — The software you are attempting to run is conflicting with the operating system, another program, or a utility. 1. Turn off the computer, wait 30 seconds, and then restart the computer. 2. Try to run the program again. 3. If the error message appears again, see the software documentation for additional troubleshooting suggestions.
Memory data line failure at *address*, read *value* expecting *value* — **Memory double word logic failure at *address*, read *value* expecting *value* —** **Memory odd/even logic failure at *address*, read *value* expecting *value* —** **Memory write/read failure at *address*, read *value* expecting *value* —** A memory module might be faulty or improperly seated. Reinstall the memory modules and, if necessary, replace them. See "Memory Problems" for additional troubleshooting suggestions.
Memory size in CMOS invalid — The amount of memory recorded in the computer configuration information does not match the memory installed in the computer. Restart the computer. If the error message appears again, contact Dell. See "Memory Problems" for additional troubleshooting suggestions.
Memory tests terminated by keystroke — A keystroke interrupted the memory test. Restart the computer to rerun the test.
No boot device available — The computer cannot find the floppy disk or hard drive. - If the floppy drive is your boot device, ensure that a bootable floppy disk is in the drive. - If the hard drive is your boot device, ensure that the drive is installed, properly seated, and partitioned as a boot device. - Enter system setup and ensure that the boot sequence information is correct.
No boot sector on hard-disk drive — - The computer configuration information in system setup might be incorrect. Enter system setup and ensure that the computer configuration information for the hard drive is correct. - The operating system might have been corrupted. Reinstall the operating system. See your operating system documentation for reinstallation information.
No timer tick interrupt — A chip on the system board might be malfunctioning. Run the **System Board Devices** tests in the Dell Diagnostics.
Non-system disk or disk error — The floppy disk does not have a bootable operating system installed on it. Either replace the floppy disk with one that has a bootable operating system, or remove the floppy disk and restart the computer.
Not a boot diskette — The operating system is trying to boot to a floppy disk that does not have a bootable operating system installed on it. Insert a bootable floppy disk.
Not enough memory or resources. Close some programs and try again — You have too many programs open. Close all windows and open the program that you want to use. In some cases, you might have to restart your computer to restore computer resources. If so, try running the program that you want to use first.
Operating system not found — Contact Dell.
Read fault — The operating system cannot read from the floppy or hard drive, the computer could not find a particular sector on the disk, or the requested sector is defective. See "Floppy drive problems" or "Hard drive problems" for troubleshooting suggestions.

Requested sector not found — The operating system cannot read from the floppy or hard drive, the computer could not find a particular sector on the disk, or the requested sector is defective. See "Floppy drive problems" or "Hard drive problems" for troubleshooting suggestions.

Reset failed — The disk reset operation failed. See "Floppy drive problems" or "Hard drive problems" for troubleshooting suggestions.

Sector not found — The operating system cannot locate a sector on the floppy or hard drive.

- Run the Windows error-checking utility to check the file structure on the floppy disk or hard drive. See Windows Help for instructions.
- If a large number of sectors are defective, back up the data (if possible), and then reformat the floppy disk or hard drive.

Seek error — The operating system cannot find a specific track on the floppy disk or hard drive. See "Floppy drive problems" or "Hard drive problems" for troubleshooting suggestions.

Shutdown failure — A chip on the system board might be malfunctioning. Run the System Board Devices tests in the Dell Diagnostics.

The file being copied is too large for the destination drive — The file that you are trying to copy is too large to fit on the disk. Try copying the file to a blank disk or using a larger-capacity disk.

Time-of-day clock stopped — The battery might be dead. Enter system setup and correct the date or time. If the problem persists, contact Dell. See "Battery Problems" for additional troubleshooting suggestions.

Time-of-day not set-please run the System Setup program — The time or date stored in system setup does not match the computer clock. Enter system setup and correct the **Date** and **Time** options.

Timer chip counter 2 failed — A chip on the system board might be malfunctioning. Run the System Board Devices tests in the Dell Diagnostics.

Unexpected interrupt in protected mode — The keyboard controller might be malfunctioning, or a memory module might be loose. Run the System Memory tests and the Keyboard Controller test in the Dell Diagnostics.

WARNING: Dell's Disk Monitoring System has detected that drive [0/1] on the [primary/secondary] EIDE controller is operating outside of normal specifications. It is advisable to immediately back up your data and replace your hard drive by calling your support desk or Dell — During initial start-up, the drive detected possible error conditions.

- When your computer finishes booting, immediately back up your data and replace your hard drive (see "Hard Drive.").
- If no replacement drive is immediately available and the drive is not the only bootable drive, enter system setup and change the appropriate drive setting to **None**. Then remove the drive from the computer.

Write fault — The operating system cannot write to the floppy or hard drive. See "Floppy drive problems" or "Hard drive problems" for troubleshooting suggestions.

Write fault on selected drive — The operating system cannot write to the floppy or hard drive. See "Floppy drive problems" or "Hard drive problems" for troubleshooting suggestions.

***x*:\ is not accessible. The device is not ready —** The floppy drive cannot read the disk. Insert a floppy disk into the drive and try again.

General Problems

The computer stops responding

Turn the computer off — If your computer locks up and you are unable to get a response by pressing a key on your keyboard or moving your mouse, press and hold the power button for at least 8 to 10 seconds until the computer turns off. Then press the power button again to turn on the computer. You might lose data if you are unable to perform an operating system shutdown.

A program stops responding

End the program —

Windows® XP

1. Press <Ctrl><Shift><Esc> simultaneously.
2. Click **Applications**.
3. Click the program that is no longer responding.
4. Click **End Task**.

Windows 2000, Windows NT®

1. Press <Ctrl><Alt><Delete> simultaneously.
2. Click **Task Manager**.
3. Click the program that is no longer responding.
4. Click **End Task**.

A program crashes repeatedly

NOTE: Software usually includes installation instructions in its documentation or on a floppy disk or CD.

Check the software documentation — Many software manufacturers maintain websites with information that may help you solve the problem. Ensure that you properly installed and configured the program. If necessary, uninstall and then reinstall the program.

A solid blue screen appears

Turn the computer off — If the computer does not respond to a keystroke or a proper shutdown, press the power button for at least 8 to 10 seconds until the computer turns off. Press the power button again to restart the computer. The chkdsk program automatically runs during the start-up process. Follow the instructions on the screen.

Other software problems

Check the software documentation or contact the software manufacturer for troubleshooting information
Back up your files immediately — If your computer has a CD-RW drive or a zip drive installed, see the drive's documentation for instructions.
Ensure that you have not made an error while entering data — See the program documentation to make sure that the values or characters you are entering are valid.
Check for viruses — Use a virus-scanning program to check the hard drive, floppy disks, or CDs.
Restart the computer — Save and close any open files, exit any open programs, and then shut down your computer through the **Start** menu instead of pressing the power button. Otherwise, you may lose data.
Check for compatibility — • Ensure that the program is compatible with the operating system installed on your computer and that your computer meets the minimum hardware requirements needed to run the software. See the software documentation for information. • If necessary, uninstall and then reinstall the program.
Ensure that you properly installed and configured the program — See the software documentation for information. If necessary, uninstall and then reinstall the program.
Run the Dell Diagnostics — Run the System Board Devices tests. If all tests run successfully, the error condition is related to a software problem.
Check for device driver conflicts — • Verify that the program's device drivers do not conflict with certain programs. • Call the software manufacturer for technical assistance.

Other technical problems

Go to the Dell Support website — Go to **support.dell.com** for help with general usage, installation, and troubleshooting questions.The support website offers several different tools to help you, such as Dell Forum—a chat room where you can communicate with other Dell customers about their computers and gain access to technical support through e-mail.
Call Dell — If you cannot solve your problem using the Dell Support website or e-mail service, call Dell for technical assistance.

General hardware problems

If your computer exhibits one or more of the following symptoms, a device conflict may exist:

- Your computer locks up, particularly while using a specific device.
- A recently added device does not work.
- Memory parity errors occur on parity-enabled computers.
- Unintelligible characters print from the printer.

- The mouse pointer does not move or "stutters" when it moves.
- Messages appear stating that the computer is not operating at maximum performance.
- Errors occur and programs crash for no apparent reason.
- Nothing displays on the monitor.

Remove any recently added hardware to see if it resolves the conflict — If removing the hardware resolves the conflict, see the hardware documentation for configuration and troubleshooting instructions. If the problem persists, contact the hardware manufacturer for technical assistance.
Check your operating system documentation for additional troubleshooting information
Check for interrupt request conflicts — See "Resolving Software and Hardware Incompatibilities."

Keyboard Problems

Fill out the Diagnostics Checklist as you complete these checks.

Restart the computer — - If the mouse is functioning, shut down the computer through the **Start** menu. After the computer shuts down, press the power button to restart the computer. - If the computer does not respond to a keystroke or the mouse, press the power button for at least 8 to 10 seconds until the computer turns off. Press the power button again to restart the computer.
Check the keyboard cable — - Ensure that the keyboard cable is firmly connected to the computer. - Check the cable connector for bent or broken pins and for damaged or frayed cables. Straighten bent pins. - Remove keyboard extension cables and connect the keyboard directly to the computer.
Test the keyboard — Connect a properly working keyboard to the computer, and try using the keyboard. If the new keyboard works, the original keyboard is faulty.
Check the keyboard switch setting — Switch settings are on the bottom of the keyboard, sometimes behind a panel. Ensure that the switch is set to **PS/2**, **Enhanced XT/AT**, or **PC/AT**. See the keyboard documentation for recommended settings.
Run the Dell Diagnostics — Run the PC-AT Compatible Keyboards tests in the Dell Diagnostics. If any of the diagnostics tests fail, contact Dell.
Check for interrupt request conflicts — See "Resolving Software and Hardware Incompatibilities."

Memory Problems

⚠ **CAUTION: Before you begin any of the procedures in this section, follow the instructions in "CAUTION: Safety Instructions."**

If you receive an insufficient memory message — - Save and close any open files and exit any open programs you are not using to see if that resolves the problem. - Confirm that the computer has sufficient memory to run your programs. See the software documentation for minimum memory requirements. If necessary, install additional memory (see "Memory"). - Reseat the memory modules (see "Memory") to ensure that your computer is successfully communicating with the memory. - Restart the computer. - Run the System Memory test group in the Dell Diagnostics. If any of the diagnostics tests fail, contact Dell.
If you experience other memory problems — - Reseat the memory modules (see "Memory") to ensure that your computer is successfully communicating with the memory. - Restart the computer. - Run the System Memory test group in the Dell Diagnostics. If any of the diagnostics tests fail, contact Dell.

Mouse Problems

Fill out the Diagnostics Checklist as you complete these checks.

Restart the computer —

1. Simultaneously press <Ctrl><Esc> to display the **Start** menu.
2. Type u, press the keyboard arrow keys to highlight **Shut down** or **Turn Off**, and then press <Enter>.
3. After the computer turns off, press the power button to restart the computer.

Check the mouse cable —

- Check the cable connector for bent or broken pins and for damaged or frayed cables. Straighten bent pins.
- Ensure that the cable is firmly connected to the computer.

Test the mouse — Connect a properly working mouse to the computer, and try using the mouse. If the new mouse works, the original mouse was faulty.

Check the mouse settings —

Windows® XP

1. Click the **Start** button, click **Control Panel**, and then click **Printers and Other Hardware**.
2. Click **Mouse**.
3. Try adjusting the settings.

Windows 2000, Windows NT®, and Windows 98

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Mouse** icon.
3. Try adjusting the settings.

If you are using a PS/2 mouse

1. Enter system setup and ensure that **Mouse Port** under the **Integrated Devices** option is set to **On**.
2. Exit system setup and restart the computer.

Reinstall the mouse driver — See "Dell Diagnostics."

Run the Dell Diagnostics — If you are using a PS/2 mouse, run the Mouse test in the Pointing Devices device group. If any of the diagnostics tests fail, contact Dell.

Check for interrupt request conflicts — See "Resolving Software and Hardware Incompatibilities."

Network Problems

Check the network cable connector — Ensure that the network cable is firmly inserted into both the network connector on the back of the computer and the network jack.

Check the network lights on the back of the computer — If the network adapter lights are off, it indicates that a physical connection to the network cannot be detected or that the integrated network adapter is disabled in system setup.

Restart the computer and try to log on to the network again

Check your network settings — Contact your network administrator or the person who set up your network to verify that your network settings are correct and that the network is functioning.

Check for interrupt request conflicts — See "Resolving Software and Hardware Incompatibilities."

Power Problems

CAUTION: Before you begin any of the procedures in this section, follow the instructions in "CAUTION: Safety Instructions."

Fill out the Diagnostics Checklist as you complete these checks.

Adjust the Power Properties — Your computer may be in standby or hibernate mode. For information on power conservation modes, see your operating system documentation.

If the power light is green and the computer is not responding — See "Diagnostic Lights."

If the power light is blinking green — The computer is in standby mode. Press a key on the keyboard or move the mouse to resume normal operation.

If the power light is off — The computer is either turned off or is not receiving power.

- Reseat both ends of the power adapter and power cable.
- If the computer power adapter is plugged into a power strip, ensure that the power strip is plugged into an electrical outlet and that the power strip is turned on.
- Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
- Bypass power protection devices, power strips, and power extension cables to verify that the computer turns on.
- Ensure that the main power cable is securely connected to the system board.
- Ensure that the front panel cable is securely connected to the system board.
- If the problem persists, contact Dell.

If the power light is amber and green — The computer is receiving electrical power, but an internal power problem might exist.

- Ensure that the voltage selection switch is set to match the AC power at your location.
- If the problem persists, contact Dell.

If the power light is steady amber — The computer is receiving electrical power, but an internal power problem might exist.

- Contact Dell.

If the power light is blinking amber — A device might be malfunctioning or incorrectly installed.

- Remove and then reinstall the memory modules.
- If the problem persists, contact Dell.

Eliminate interference — Electrical appliances on the same circuit or operating near the computer can cause interference. Other causes of interference are:

- Power extension cables
- Keyboard and mouse extension cables
- Too many devices on a power strip
- Multiple power strips connected to the same electrical outlet

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Printer Problems

NOTE: Dell does not cover the printer's warranty. If you need technical assistance for your printer, call the printer's manufacturer. See the printer documentation for the correct phone number.

Check the printer documentation — See the printer documentation for setup and troubleshooting information.

Ensure that the printer is turned on — See the printer documentation for power button information.

Verify the printer cable connections —

- See the printer documentation for cable connection information.
- Ensure that the printer cables are securely connected to the printer and the computer.

Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.

Verify that the printer is recognized by Windows® —

Windows XP

1. Click the **Start** button.
2. Click **Control Panel**.
3. Click **Printers and Other Hardware**.
4. Click **View installed printers or fax printers**.

   If the printer is listed, right-click the printer icon.

5. Click **Properties,** and then select the **Ports** tab. For a parallel printer, ensure that the **Print to the following port(s):** setting is **LPT1 (Printer Port)**. For a USB printer, ensure that the **Print to the following port(s):** setting is **USB**.

Windows 2000 and Windows NT®

1. Click the **Start** button, point to **Settings**, and then click **Printers**.

   If the printer is listed, right-click the printer icon.

2. Click **Properties,** and then select the **Ports** tab. For a parallel printer, ensure that the **Print to the following port(s):** setting is **LPT1 (Printer Port)**. For a USB printer, ensure that the **Print to the following port(s):** setting is **USB**.

Serial or Parallel Device Problems

Fill out the Diagnostics Checklist as you complete these checks.

NOTE: If you are having a problem with a printer, see "Printer Problems."

Check the documentation for the device — See the device's documentation for troubleshooting procedures.
Ensure that the device is turned on — Firmly press the device's power button.
Check the device cable connections — Check the connector for bent or broken pins. (It is normal for most device cable connectors to have missing pins.) Ensure that the device cable is firmly connected to the computer.
Test the device cable — Swap the device's cable with a cable that works properly.
Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
Eliminate interference — Relocate any electrical appliances on the same circuit or operating near the computer that might cause interference. Remove these other possible causes of interference: • Power extension cables • Keyboard and mouse extension cables • Too many devices on a power strip • Multiple power strips connected to the same electrical outlet
Check the option setting — See the device's documentation for the recommended settings. Then enter system setup and go to the **Integrated Devices** option settings. Ensure that the **Serial Port** setting (for a serial device) or the **Parallel Port** setting (for a parallel device) matches the recommended settings.
Check the software documentation — If the problem occurs with particular software, see the software documentation for the recommended serial or parallel port settings. Ensure that the port settings match the recommended settings.
Run the Dell Diagnostics — Run the Serial Ports device group and/or the Parallel Ports device group. If the tests do not complete, contact Dell.
Test the device — Swap the device with a comparable device that works properly.

Sound and Speaker Problems

Fill out the Diagnostics Checklist as you complete these checks.

No sound from speakers

NOTE: The volume control in some MP3 players overrides the Windows® volume setting. If you have been listening to MP3 songs, ensure that you did not turn the player volume down or off.

Check the speaker cable connections — Ensure that the speakers are connected as shown on the setup diagram supplied with the speakers.
Ensure that the subwoofer and the speakers are turned on — See the setup diagram supplied with the speakers. If your speakers have volume controls, adjust the volume, bass, or treble to eliminate distortion.
Adjust the Windows volume control — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.
Disconnect headphones from the headphone connector — Sound from the speakers is automatically disabled when headphones are connected to the computer's front-panel headphone connector.
Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
Eliminate possible interference — Turn off nearby fans, fluorescent lights, or halogen lamps to check for interference.
Run the speaker diagnostics — Some speaker systems have self- diagnostics. See the speaker documentation for diagnostics instructions.
Reinstall the audio (sound) driver — See "Dell Diagnostics."
Check the device option setting — Enter system setup and ensure that **Sound** under the **Integrated Devices** option is set to **On**. Exit system setup and reboot the computer.
Check for interrupt request conflicts — See "Resolving Software and Hardware Incompatibilities."

No sound from headphones

Check the headphone cable connection — Ensure that the headphone cable is securely inserted into the headphone connector (see "Front View").
Adjust the Windows volume control — Click or double-click the speaker icon in the lower-right corner of your screen. Ensure that the volume is turned up and that the sound is not muted.

Disable digital mode — Your headphones do not work if the CD drive is operating in digital mode. To disable digital mode: 1. Click the **Start** button, click **Control Panel**, and then click **Sounds, Speech, and Audio Devices**. 2. Click **Sounds and Audio Devices**. 3. Click the **Hardware** tab. 4. Double-click the name of your CD drive. 5. Click the **Properties** tab. 6. Uncheck the **Enable digital CD audio for this CD-ROM device** box.

System Board Problems

Fill out the Diagnostics Checklist as you complete the following checks.

CAUTION: Before you begin any of the procedures in this section, follow the instructions in "CAUTION: Safety Instructions."

Check the power supply cable connections — Check the connections between the power adapter and the computer, and the power connector and the wall outlet.
Perform all checks in "Keyboard Problems"
Reinstall the battery — 1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and open the computer. 2. Remove the battery, wait 5 minutes, and reinstall the battery. 3. Close the computer cover, reconnect the computer and devices to electrical outlets, and turn them on. If the problem still exists, contact Dell.
Replace the Memory Modules — 1. Turn off the computer and devices, disconnect them from their electrical outlets, wait 10 to 20 seconds, and remove the computer cover. 2. Replace the memory module(s). 3. Replace the computer cover, reconnect the computer and devices to electrical outlets, and turn them on. 4. If the RAM count displayed does not correctly match the actual amount of memory installed in the computer, contact Dell.

Video and Monitor Problems

Fill out the Diagnostics Checklist as you complete these checks.

If the screen is blank

NOTE: See the monitor documentation for troubleshooting procedures.

Check the monitor power light — If the power light is off, firmly press the button to ensure that the monitor is turned on. If the power light is lit or blinking, the monitor has power. If the power light is blinking, press a key on the keyboard or move the mouse.
Check the monitor cable connection — Check the connector for bent or broken pins. (It is normal for monitor cable connectors to have missing pins.)
Test the electrical outlet — Ensure that the electrical outlet is working by testing it with another device, such as a lamp.
Swap the power cables — Swap the monitor power cable with a known working monitor cable to determine if the power cable is defective.
Test the video extension cable (if used) — If you are using a video extension cable and removing the cable solves the problem, the cable is defective.
Test another monitor — If another monitor is available, connect it to the computer.
Check the diagnostic lights — See "Diagnostic Lights."
Run the Dell Diagnostics — Run the VESA/VGA Interface tests. If any tests fail, contact Dell.

If the screen is difficult to read

Check the monitor settings — See the monitor documentation for instructions on adjusting the contrast and brightness, demagnetizing (degaussing) the monitor, and running the monitor self-test.
Move the subwoofer away from the monitor — If your speaker system includes a subwoofer, ensure that the subwoofer is at least 60 cm (2 ft) away from the monitor.
Move the monitor away from external power sources — Fans, fluorescent lights, halogen lamps, and other electrical devices can cause the screen image to appear "shaky." Turn off nearby devices to check for interference.
Adjust the Windows® display settings — *Windows XP* 1. Click the **Start** button, and then click **Control Panel**. 2. Click **Appearance and Themes**. 3. Click **Display**, and then click the **Settings** tab. 4. Try different settings for **Screen resolution** and **Color quality**. *Windows 98, 2000, and Windows NT®* 1. Click the **Start** button, point to **Settings**, and then click **Control Panel**. 2. Double-click the **Display** icon, and then click the **Settings** tab. 3. Try different settings for **Screen area** or **Desktop area**.

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Technical Specifications

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Microprocessor	
Microprocessor type	Intel® Pentium® 4 and Celeron® microprocessors. Design provides for future processor upgrades. Supported processor upgrades are available from Dell.
Level 1 (L1) cache	8 KB
Level 2 (L2) cache	1.5–2.0* GHz processors: 256-KB pipelined-burst, eight-way set-associative, write-back SRAM 2.2–2.6 GHz processors: 512-KB SRAM *Certain 2.0-GHz systems may be upgraded to 512-KB cache.
Memory	
Architecture	200- and 266-MHz DDR SDRAM
Dual in-line memory module (DIMM) sockets	two (non-ECC only)
DIMM capacities	128, 256, 512 MB, and 1 GB
Minimum RAM	128 MB
Maximum RAM	2 GB
BIOS address	F0000h
Computer Information	
Computer chip set	Intel 845G
Data bus width	64 bits
Address bus width	32 bits
Direct memory access (DMA) channels	7
Interrupts	23
Computer BIOS	4-Mb flash chip
System bus speed	400- or 533-MHz quad-data rate; 100- or 133-MHz clock (matches external bus speed)
Network interface controller	integrated PCI Network Interface with ASF (Alert Standards Format) support as defined by DMTF.
Audio	
Audio type	AC97, Sound Blaster emulation; optional internal speaker
Audio controller	Integrated AC97 Codec
Stereo conversion	16-bit analog-to-digital; 20-bit digital-to-analog
Interfaces:	
Internal	PCI bus/AC97
External	stereo line-in minijack and line-out minijack on the rear I/O panel; headphone and microphone connectors on the front panel
Video	GMCH embedded graphics
Expansion Bus	
Bus type	USB 2.0
Memory module connector size	DDR — 184 pins
Drives	
Externally accessible bay	one module bay for Dell portable devices
Internally accessible bay	one bay for a 2.5-inch IDE hard drive
Ports	

Externally accessible:	
Serial (data terminal equipment [DTE])	one 9-pin connector; 16550-compatible on the back I/O panel
Parallel	one 25-hole connector (bidirectional) on the back I/O panel
Video	15-hole VGA connector on the back I/O panel
Integrated network adapter	RJ45 connector on the back I/O panel; 10/100/1000
PS/2-style keyboard	6-pin mini-DIN on the back I/O panel
PS/2-compatible mouse	6-pin mini-DIN on the back I/O panel
USB	four USB-compliant connectors on the back I/O panel; two on the front panel
Internally accessible:	
Primary IDE hard drive	44-pin connector
Fans	two 3-pin connectors
Key Combinations	
<Ctrl><Alt><Del>	restarts (reboots) the computer
<Ctrl><Alt><\>	toggles microprocessor speeds on 101-key keyboard (in MS-DOS® real mode only)
<Ctrl><Alt><#>	toggles microprocessor speeds on 102-key keyboard (in MS-DOS real mode only)
<F2> or <Ctrl><Alt><Enter>	starts embedded system setup (during start-up only)
<F3>	automatically starts the computer from the network environment specified by the remote boot environment (PXE) rather than from one of the devices in the system setup **Boot Sequence** option (during start-up only)
<F12> or <Ctrl><Alt><F8>	displays a one-time boot device menu that lets the user enter a device for a single boot (during start-up only)
<Ctrl><Alt><F10>	launches the utility partition (if installed) during computer start-up
<Ctrl><Alt><D>	launches the hard-drive diagnostics utility during computer start-up
Controls and Lights	
Power control	push button
Power lights	green light on power button—blinking green in sleep state; solid green for power-on state amber light—blinking amber indicates a problem with an installed device; solid amber indicates an internal power problem
Hard-drive access light	green light
Link integrity light (on integrated network adapter)	green light for 10-Mb operation; orange light for 100-Mb operation; yellow light for a 1000-Mb (1-Gb) operation
Activity light (on integrated network adapter)	yellow blinking light
Diagnostic lights	four yellow and/or green lights on back panel
Standby power light	12V_PWR on the system board
Power	
External DC power adapter:	
Wattage	150 W
Heat dissipation	455 BTU/hr (average)
Voltage	90 to 135 V at 60 Hz; 180 to 265 V at 50 Hz
Backup battery	3-V CR2032 lithium coin cell
Physical	
Vertical orientation width, depth, and height (without stand or cable cover)	3.4 inches (8.5 cm), 9.7 inches (24.2 cm), 9.9 inches (24.7 cm)
Vertical orientation width, depth, and height (with stand)	3.4 inches (8.5 cm), 9.7 inches (24.2 cm), 10.9 inches (27.2 cm)
Vertical orientation width, depth, and height (with stand and cable cover)	3.4 inches (8.5 cm), 12.1 inches (30.2 cm), 10.9 inches (27.2 cm)
Horizontal orientation width, depth, and height (without stand or cable cover)	9.9 inches (24.7 cm), 9.7 inches (24.2 cm), 3.4 inches (8.5 cm)
Weight (without stand or cable cover)	7.2 lbs (3.3 kg)
Weight (with stand and cable cover)	8 lbs (3.6 kg)
Environmental	
Temperature:	
Operating	10° to 35°C (50° to 95°F)
Storage	–40° to 65°C (–40° to 149°F)

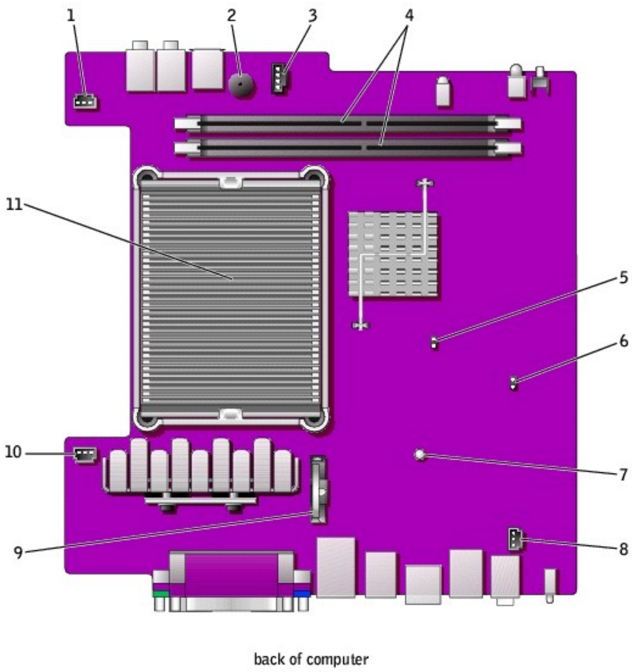
Relative humidity	20% to 80% (noncondensing)
Maximum vibration:	
Operating	desktop or vertical hanging orientation: 0.25 gravities (G) at 3 to 200 Hz at 0.5 octave/min; horizontal orientation: 0.25 G at 20 to 200 Hz at 0.5 octave/min
Storage	0.5 G at 3 to 200 Hz at 1 octave/min
Maximum shock:	
Operating	bottom half-sine pulse with a change in velocity of 20 inches/sec (50.8 cm/sec)
Storage	27-G faired square wave with a velocity change of 200 inches/sec (508 cm/sec)
Altitude:	
Operating	−16 to 3048 m (−50 to 10,000 ft)
Storage	−16 to 10,600 m (−50 to 35,000 ft)

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System Board Components

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1	fan shroud power connector (FAN2)
2	system board speaker (SPEAKER)
3	speaker connector (SPEAKER)
4	memory modules (DIMM_A and DIMM_B)
5	RTC reset jumper (RTCRST)
6	password jumper (PSWD)
7	standby power indicator (12V_PWR)
8	chassis intrusion switch power connector (INTRUDER)
9	battery (BATTERY)
10	fan shroud power connector (FAN1)
11	microprocessor heat sink

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Microsoft® Windows® XP Features

Dell™ OptiPlex™ SX260 Systems User's Guide

Overview

Based on an enhanced version of the Windows 2000 operating system, Windows XP is available in consumer and business editions: Windows XP Home Edition and Windows XP Professional. The features discussed are available in both editions, but the Professional version, designed for business environments, includes additional productivity, security, networking, and management features important in business environments.

For home users, Windows XP brings the significantly increased stability and security inherent in the Windows 2000/Windows NT® operating systems. It also provides better support for portable computers. Key new Windows XP features include:

- An improved desktop and user interface
- Files and Settings Transfer Wizard
- Application program compatibility enhancements
- System Restore
- Fast User Switching*
- Expanded home and small office networking functions*
- A personal firewall for always-on Internet connections*

*Home and small office features

Help and Support Center

The Help and Support Center, introduced with Microsoft Windows Millennium Edition (Me), replaces Windows Help from earlier operating systems. The Help and Support Center provides an integrated resource center for information and assistance in using, configuring, and troubleshooting your computer and installed hardware devices and software. For Windows XP, the Help and Support Center features expanded search capabilities, including full-text search and the capability to search across multiple remote sites in addition to files resident on the hard drive. You can use a single print command to print an entire chapter of help content.

To open Help and Support Center, click the **Start** button, and then click **Help and Support**. From the home page, you can conduct a search or select categories of information, leading to task and information topics covering the use of your computer. Click **User and System Guides** for information on using your Dell™ computer, including installed hardware devices and software.

New User Interface

Windows XP features a redesigned user interface with a new visual style, a less cluttered desktop, and built-in desktop cleanup features. Window layout has also been changed for Windows XP and, as in the **Control Panel**, emphasizes task presentation. The **Start** menu has been redesigned. The left half of the new **Start** menu includes the most frequently used icons. As you use your computer, the icons in this area are changed and rearranged depending on your computer usage patterns. If you wish to keep one of the icons permanently in its location, right-click the icon and click **Pin to Start menu**.

To access all the programs installed on the computer, click **All Programs** at the bottom of the **Start** menu. The right half of the new **Start** menu contains useful

icons for accessing your files, configuring the computer, and finding information and assistance. The **Dell Solution Center** icon opens a portal to services and application programs installed on your Dell computer.

Switching to Classic View

If you want, you may change the appearance of the **Start** menu, desktop and windows, or **Control Panel** layout to that of earlier Windows operating systems. These *classic view* options are independent of each other.

You can easily switch back and forth between the new **Control Panel** category view and the classic icon view by clicking **Switch to Classic View** or **Switch to Category View** in the upper left area of the **Control Panel** window. This can be handy if you want to take advantage of the new, task-oriented features of the Windows XP **Control Panel**, but you are accustomed to performing a particular task with the icon-oriented classic **Control Panel**.

To change the appearance of the **Start** menu to the classic view:

1. Right-click the empty area on the task bar.
2. Click **Properties**.
3. Click the **Start Menu** tab.
4. Select **Classic Start Menu** and click **OK**.

If you prefer the classic window and button appearance, perform the following steps:

1. Right-click anywhere on the main desktop screen and click **Properties**.
2. Click the **Appearance** tab.
3. From the **Windows and buttons** dropdown box, select **Windows Classic style**.
4. To customize color, font, and other classic desktop options, click **Advanced**.
5. When you have completed your appearance selections, click **OK**.

Clean Desktop Wizard

Another feature of Windows XP is the Desktop Cleanup Wizard. The wizard runs 7 days after you first start your computer and every 60 days after that. The Desktop Cleanup Wizard first opens a dialog box informing you that there are unused icons on the desktop and asking whether you want to run the wizard. If you elect to run the wizard, it places unused desktop icons in the folder **C:\Desktop Icons**.

The default for the Desktop Cleanup Wizard is on. To turn the wizard off:

1. Right-click anywhere on the main desktop screen and click **Properties**.
2. Select the **Desktop** tab and click **Customize Desktop**.
3. In the **Desktop cleanup** options make sure that the **Run Desktop Cleanup Wizard every 60 days** box is not checked.

You can run the Desktop Cleanup Wizard anytime by following these steps:

1. Right-click anywhere on the main desktop screen and select **Properties**.
2. Click the **Desktop** tab and click **Customize Desktop**.
3. Click **Clean Desktop Now**.
4. When the **Desktop Cleanup Wizard** welcome screen appears, click **Next>**.
5. In the **Shortcuts** list, deselect any shortcuts you want to leave on the desktop, and then click **Next>**.
6. Click **Finish** to remove the shortcuts and close the wizard.

   The shortcuts are moved to the folder **C:\Desktop Icons**.

To access desktop icons removed by Windows XP, click the **Start** button, and then click **Dell Solution Center**.

Taskbar Grouping

The Windows taskbar is a row of buttons that typically displays across the bottom of the screen. The taskbar includes the **Start** menu button and a button for each open application. (The taskbar also includes the Quick Launch icons and the notification area.) Windows XP groups multiple instances of the same application on the taskbar. For example, if six instances of Internet Explorer are open, each displaying a button on the taskbar, Windows XP groups the buttons next to one another on the taskbar. If space becomes an issue on the taskbar, Windows XP consolidates all the Internet Explorer buttons into a single button. When clicked, that button expands to a menu of the six Internet Explorer active sessions.

Notification Area Cleanup

Over time, software icons tend to proliferate in the notification area, the area in the bottom right corner of the Windows desktop. Windows XP detects when icons in the notification area are not being accessed and hides them. A caret, or chevron, button indicates that there are hidden icons that can be viewed by selecting the button. You can also configure the notification area manually by right-clicking the taskbar, selecting **Properties**, and then clicking **Customize...** in the **Taskbar and Start Menu Properties** window. For example, you may choose to hide the antivirus program icon because it is rarely accessed, but display the audio volume icon because it is used frequently. The notification area cleanup feature is automatically enabled when the operating system is installed, but you may disable it by unchecking **Hide inactive icons** in the **Taskbar and Start Menu Properties** window.

Files and Settings Transfer Wizard

The Files and Settings Transfer Wizard is used to migrate personal files and settings from one computer to another (for instance, when upgrading to a new computer). Personal files include the documents, images, spreadsheets, presentations, and e-mail messages on your computer. User settings include display properties, window sizes, toolbar settings, dial-up connections, Internet bookmarks, and so forth on your computer. The Files and Settings Transfer Wizard is run on a source (old) computer to collect the data and is run again on the destination (new) computer to import the data. If the old computer is using an earlier operating system, the wizard can be launched either from the Windows XP CD or from a diskette created on the new Windows XP computer. You transfer the data to the new computer over a network or direct serial connection, or store it on a removable medium such as a floppy disk, Zip disk, or writable CD.

To use the Files and Settings Transfer Wizard:

1. On the new Windows XP computer, click the **Start** button, point to **All Programs—> Accessories—> System Tools**, and click **Files and Settings Transfer Wizard**.
2. On the **Files and Settings Transfer Wizard** welcome screen, click **Next>**.
3. On the **Which computer is this?** screen, select **New Computer**, and then click **Next>**.
4. The **Do you have a Windows XP CD?** screen appears.

The Files and Settings Transfer Wizard guides you through the steps necessary to transfer user settings, personal files, or both to the new computer. If a CD drive is not available, the wizard allows you to create a wizard diskette to run on your old computer.

NOTE: The time required to collect and transfer data depends on the amount of data collected. Times can vary from just a few minutes to several hours.

Application and Device Compatibility

Although Windows XP is designed to be compatible with a wide range of application programs and hardware devices, some older programs and devices may not be usable. Check the Microsoft website at **www.microsoft.com** for application programs and hardware devices known to be compatible. When buying new software and devices, look for those that are labeled as ready for Windows XP. If you encounter problems using an application program designed for an earlier Windows operating system, Windows XP provides a compatibility mode feature (see "Program Compatibility Wizard"). If you are unsuccessful at installing application programs or hardware devices designed to operate on earlier Windows operating systems, contact the manufacturer of the product for information or updates for Windows XP.

Windows XP also includes a new technology that addresses the problems sometimes encountered on previous operating systems with Windows application programs that, when installed, replace current versions of certain Windows files with older versions. This situation can cause problems with the newer application programs, which rely on the replaced files. To eliminate this problem and improve operating system stability, Windows XP manages multiple versions of files and invokes the correct version required by a program.

NOTE: If you experience problems with your operating system or other applications after performing an installation, you can use System Restore to return your computer to a previous stable condition.

Program Compatibility Wizard

A program compatibility feature is provided in Windows XP that solves some issues that may be encountered when attempting to run older application programs. Using the Program Compatibility Wizard, you can configure a program to run in an environment closer to Windows 95, Windows 98/Me, Windows NT 4.0 with Service Pack 5, or Windows 2000.

To use the Program Compatibility Wizard:

1. Click the **Start** button, point to **All Programs—> Accessories**, and click **Program Compatibility Wizard**.
2. When the welcome screen appears, click **Next>**.
3. Select how you want to locate the program to run with compatibility settings: from a list, available on a CD, or manually located. Then click **Next>**.
4. Select the type of operating system for which the program was designed or on which it ran successfully, and then click **Next>**.
5. If necessary, as for some games, select display settings for the program.
6. Click **Next>**.
7. To test the compatibility settings for the program, click **Next>**.

   After you have determined whether the program is running correctly, return to the **Program Compatibility Wizard** window.

8. Select **Yes** if the program ran correctly, **No, try different compatibility settings**, or **No, I am finished trying compatibility settings** and click **Next>**.
9. Select either **Yes** to send information about the settings you used and whether they fixed the problem, or select **No**, and then click **Next>**.
10. Click **Finish** to close the wizard.

System Restore

The System Restore feature of Windows XP provides the capability to restore the operating system, in the event of a problem, to a previous state without losing personal data files (such as Word documents, drawings, or e-mail).

System Restore actively monitors system file changes and some application file changes to record or store previous versions before the changes occurred. System Restore maintains a rolling record of restore points; to limit the amount of space used, older restore points are purged to make room for newer ones.

In the event of a serious operating system problem, System Restore can be used from Safe Mode or Normal Mode to go back to a previous system state, restoring optimal system functionality.

NOTE: System Restore does not revert user data or document files, so restoring does not cause loss of work, mail, or browsing history and favorites.

NOTE: Dell recommends that you make regular backups of your data files. System Restore does not monitor changes to or recover your data files. In the event the original data on the hard drive is accidentally erased or overwritten or becomes inaccessible because of a hard-drive malfunction, backup files are required to recover lost or damaged data.

Using System Restore

System Restore monitors a core set of system and application program files, recording and sometimes copying states of these files before changes are made. System Restore automatically creates restore points; no user intervention is required. In addition, you can create restore points manually, if desired.

Restore points are created to allow you to choose previous system states. Each restore point gathers the necessary information needed to restore to a precisely chosen system state. There are three types of restore points:

- System (automatically created) restore points (scheduled by your computer)
- Installation (event-triggered) restore points (when a program is installed)
- Manual restore points (created by you as needed)

Scheduled Automatic Restore Points

By default, System Restore creates a restore point every day that the computer is running. If your computer is off for more than a day, a new restore point is created the next time you turn the computer on.

Event-Triggered Restore Points

Event-triggered restore points are created before key changes are made to the system. System Restore automatically creates a restore point before the following events:

- *Application installations* — System Restore creates a restore point before you install an application program designed for Windows XP. You may wish to create a manual restore point before attempting to install an older program.
- *AutoUpdate installation* — When you choose to install the update, System Restore creates a restore point before the actual installation of the update begins.
- *Restore operation* — The restore operation itself also creates a restore point for undo purposes.
- *Microsoft Backup Utility recovery* — Before Microsoft Backup Utility (only available in Windows XP Professional) performs a backup recovery, System Restore creates a restore point.
- *Unsigned driver installation* — The INF installer of Windows detects unsigned device-driver installations. Drivers that are signed (electronically certified by the device manufacturer) do not generate a restore point.

Manual Restore Points

If you are logged on to the computer as computer administrator or as a user with administrator rights, you may create and name an on-demand restore point. (For information on types of user accounts, see "How to Add Users.") This is useful to create a checkpoint to return to before making a particularly risky change, before leaving a shared system to other users, or at a particular state you believe is optimal.

To create a restore point:

1. Click the **Start** button, point to **All Programs—> Accessories—> System Tools**, and then click **System Restore**.
2. Select **Create a restore point** and click **Next>**.
3. Type a description of the restore point and click **Create**.

   The date and time are automatically added to the description of the new restore point.

Restore Process

As the computer is used over time, restore points are collected in the archive without any management or intervention. If you encounter operating system problems, you can use the System Restore feature to select any of the restore points presented through the System Restore Wizard.

If problems occur after installing a device driver, you should first attempt to use Driver Rollback. If that is unsuccessful, then use System Restore.

To return your computer to a previous, stable condition:

1. Click the **Start** button, point to **All Programs—> Accessories—> System Tools**, and then click **System Restore**.
2. Select **Restore my computer to an earlier time** and click **Next>**.

   The **Select a Restore Point** screen appears. The calendar on the left indicates in bold the dates on which restore points were created.

3. Click a date, click a restore point for that date, and click **Next>**.
4. Click **Next>** to confirm the restore point selection and complete the restore process.

   After System Restore finishes collecting data, the computer automatically restarts and the **Restoration Complete** screen appears.

5. Click **OK**.

   If you are not satisfied with the results of the restoration, you can repeat the preceding steps, using a different restore point, or you can undo the

restoration.

To undo a restoration:

1. Click the **Start** button, point to **All Programs—> Accessories—> System Tools**, and then click **System Restore**.
2. Select **Undo my last restoration** and click **Next>**.
3. Click **Next>** to confirm the restoration undo.

   After System Restore finishes collecting data, the computer automatically restarts and the **Undo Complete** screen appears.

4. Click **OK**.

Driver Rollback

Windows XP device Driver Rollback can replace a device driver with the previously installed version. When you install a new device driver that causes system instability, use Driver Rollback to reinstall the previous drivers. In the event that Driver Rollback cannot reinstall your previous driver, you can use System Restore to return your operating system to its state before the new device driver installation.

To use Driver Rollback:

1. Click the **Start** button, and then right-click **My Computer**.
2. Click **Properties**.
3. Click the **Hardware** tab, and then click **Device Manager**.
4. In the **Device Manager** window, right-click the device for which the new driver was installed, and then click **Properties**.
5. Click the **Drivers** tab, and then click **Roll Back Driver**.

User Accounts and Fast User Switching

NOTE: Fast User Switching is the default user screen for both Home and Professional editions, but it is disabled in Windows XP Professional when the computer is a member of a computer domain.

Microsoft Windows XP includes a new feature that provides multiuser access to a single computer. Fast User Switching, which is available in both the Home and Professional editions, allows users to access the computer with their specific settings, including the desktop and various applications, without requiring the previous user to log off. New users log on and switch from the original user's session to their own. New users can run their desktop and applications without interfering with the original user. When the original user returns, that user can switch back to the desktop and applications with the original settings. All of this is accomplished without the delay of each individual user logging off the computer.

During setup, the computer administrator creates all the accounts that will be used on the computer. (For information on types of accounts and adding new accounts, see "How to Add Users.") When the computer starts, the main user **Welcome** screen appears with all of the user names. From this screen you select an account and log into that session.

How to Use Fast User Switching

To access Fast User Switching:

1. Click the **Start** button and click **Log Off**.
2. When the **Log Off Windows** screen appears, click either **Switch User** or **Log Off**.
3. When you select **Switch User**, the main user **Welcome** screen appears. You can then select your account name and log in.

   Your personal desktop appears.

What Happens When a Fast User Switch Occurs?

When a fast user switch occurs, the original user is not logged off the computer as previously happened on other Microsoft operating systems. On Windows XP, the user's logon remains active, but is replaced by the new user. Users can switch between login IDs as often as they want.

However, user applications active during a user switch remain active and running in the background while the new user is working; this can result in a slower computer until the process finishes. For example, if one user is downloading a large file from the Internet and another user logs on to the computer, the file download continues in the background until it is complete.

While most applications continue to run in the background during a fast user switch, multimedia applications do not. Because multimedia applications use resources that cannot easily be shared between different users on a single computer, those applications terminate during the user switch, allowing the new user to take full advantage of the multimedia capabilities.

Special Considerations With Fast User Switching

Considerations when using Fast User Switching include:

- Some older Windows games may not operate with a fast user switch.
- Multimedia games may shut down on a fast user switch.
- DVD software shuts down and requires a restart when the user comes back.
- Computers with low memory configurations can experience problems. The computer uses memory to keep the first user's programs running in the background while the second user is logged on. On computers with limited memory, this can cause the entire computer to run slowly. Fast User Switching is off by default on computers with less than 128 megabytes (MB) of random-access memory (RAM).

Fast User Switching is unavailable if the computer has Windows XP Professional installed and is a member of a computer domain.

How to Turn Off Fast User Switching

You must have a computer administrator account on the computer to turn off Fast User Switching. (For information on types of accounts, see "How to Add Users.")

To disable Fast User Switching:

1. Click the **Start** button, and click **Control Panel**.
2. In the **Control Panel** window, click **User Accounts**.
3. Under **Pick a task**, click **Change the way users log on or off** and do one of the following:
   - Select the **Use Fast User Switching to log off** check box to enable Fast User Switching.
   - Deselect the **Use Fast User Switching to log off** check box to disable Fast User Switching.
4. Click **Apply Options**.

How to Add Users

Only a computer administrator or a user with administrator rights can create multiple user accounts. The individual who performs the initial operating system setup creates a computer administrator account and can add any number of users during the initial setup. All user accounts created during setup have administrator rights.

After initial operating system setup, the computer administrator or a user with administrator rights can create additional user accounts.

To add users, perform the following steps:

1. Click the **Start** button, and click **Control Panel**.
2. In the **Control Panel** window, click **User Accounts**.
3. In the **User Accounts** window under **Pick a Task**, click **Create a new account**.
4. In the box under **Name the new account**, type the name of the new user. Click **Next>**.

5. Under **Pick an account type**, click the bullet next to the type of account you are going to create — **Computer administrator**, **Standard**, or **Limited**.
   - Computer administrators can change all computer settings.
   - Standard account users (Windows XP Professional only) can install some programs and hardware.
   - Limited account users can change only a few settings such as their own passwords.
6. Click **Create Account**.

After the accounts are created, each shows up on the Fast User Switching **Welcome** screen.

Home and Small Office Networking

The Network Setup Wizard includes a checklist and steps to guide you through the process of sharing resources, such as files, printers, or an Internet connection, between computers in a home or small office. In Windows XP, Microsoft has improved the online documentation and usability of operating-system tools for setting up a home or small office network. New features in the operating system include support for the Point-to-Point Protocol over Ethernet (PPPoE) and a built-in firewall.

Network Setup Wizard

The Home Network Wizard first appeared in Windows Me. To make setting up a home or small office network easier, Microsoft developed an enhanced Network Setup Wizard for Windows XP. This version provides more complete online documentation and support for setting up a home or small office network. The new wizard automatically enables the personal firewall discussed later in this section (see "Internet Connection Firewall").

To use the wizard:

1. Click the **Start** button, point to **All Programs—> Accessories—> Communications**, and click **Network Setup Wizard**.
2. When the welcome screen appears, click **Next>**.
3. Click **checklist for creating a network**.

   The checklist leads you through the steps necessary to set up a home or small office network and provides extensive references for each step. When you have completed the necessary connections and preparations, return to the **Network Setup Wizard**.

4. Select the Internet connection method and click **Next>**.
5. Select the Internet connection and click **Next>**.
6. Type a description of the computer and a computer name, and then click **Next>**.
7. Review the network settings and click **Next>** to finish the setup.
8. When the setup process is complete, click **Finish** to close the wizard.

Internet Connection Firewall

Today's always-on cable modem and DSL Internet access connections offer unprecedented bandwidth to the home, but also leave the connected computer or home network vulnerable to hacker attacks. The nature of these attacks varies, but the goal is to gain access to individual computers attached to the Internet. With this access, a hacker can browse the hard drive and add or delete files, discover passwords and credit card numbers, and set the system up to launch attacks on other systems or websites. As a result, firewall protection from these attacks is increasingly required on computers. Recognizing this need, Microsoft provides an integrated firewall in Windows XP to provide immediate protection from outside access attempts. When enabled, the Internet Connection Firewall provides basic protection suitable for most home and small office users.

NOTE: Enabling the Internet Connection Firewall does not reduce the need for virus-checking software.

The firewall is automatically enabled when you run the Network Setup Wizard. When the firewall is enabled for a network connection, its icon appears with a red background in the **Network Connections** portion of the **Control Panel**. The Internet Connection Firewall can be applied to each Internet connection on the computer. The firewall also provides basic logging capabilities. Not all events that appear in the log are hacker attacks. Many different types of harmless events can appear in the log, such as routine checks by an Internet Service Provider to verify the presence of your computer (pings).

The firewall is configured using the **Properties** dialog box associated with each Internet connection in the **Control Panel**. The firewall can be enabled or

disabled. Additional configuration options are available for more advanced users. These advanced options include the ability to open or close specific Transmission Control Protocol (TCP) or User Datagram Protocol (UDP) ports or to enable port redirection. Port redirection allows access requests to a specific port on the firewall (such as port 80, the Web server port) to be automatically redirected to another computer on the local network. This capability allows a Web server on a home network to be protected by an edge firewall.

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